

636515

REPORT NUMBER: 214-CAL-03-04

**SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT**

HYUNDAI MOTOR COMPANY
2003 HYUNDAI ACCENT
4-DOOR SEDAN

NHTSA NUMBER: C30501

VERIDIAN ENGINEERING TEST NUMBER: 8675-F214-04

VERIDIAN ENGINEERING
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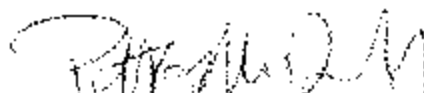
March 21, 2003

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6111 (NVS-220)
Washington, DC 20590

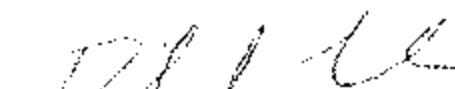
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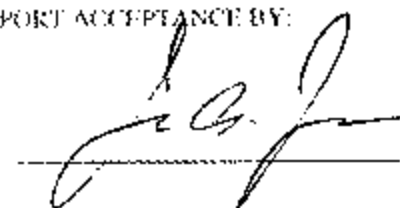
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16. Abstract <p>A 55/28 kph 90° Side Impact (Moving Deformable Barrier) Indicant Test was conducted on the subject Hyundai Accent 4-Door Sedan. This test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001). This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on March 21, 2003.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 61.31 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 20°C. The target vehicle post-test maximum crush was 346 mm at level 2.</p> <p>The test or target vehicle's performance is given below:</p> <table border="0"> <thead> <tr> <th></th> <th align="center"><u>Front SID H3</u></th> <th></th> <th align="center"><u>Rear SID H3</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td align="center">61</td> <td align="center">g's</td> <td align="center">88.9</td> <td align="center">g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td align="center">68</td> <td align="center">g's</td> <td align="center">94.7</td> <td align="center">g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td align="center">92.8</td> <td align="center">g's</td> <td align="center">90.8</td> <td align="center">g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td align="center">80</td> <td align="center">g's</td> <td align="center">93</td> <td align="center">g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td align="center">74</td> <td align="center">g's</td> <td align="center">95</td> <td align="center">g's</td> </tr> </tbody> </table> <p>The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.</p>							<u>Front SID H3</u>		<u>Rear SID H3</u>		Left Upper Rib Acceleration:	61	g's	88.9	g's	Left Lower Rib Acceleration:	68	g's	94.7	g's	Lower Spine Acceleration:	92.8	g's	90.8	g's	Thoracic Trauma Index (TTI):	80	g's	93	g's	Pelvis Acceleration (PEV):	74	g's	95	g's
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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-01114. The purpose of this indicant test was to evaluate side impact protection in a 2003 Hyundai Accent 4-Door Sedan when tested at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

SECTION 2

SUMMARY OF SIDE IMPACT TEST

This Side Impact Protection Indicant Test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

A 2003 Hyundai Accent 4-Door Sedan was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 61.31 kph (38.1 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Veridian Engineering Transportation Sciences Center in Buffalo, New York on March 21, 2003. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the Side Impact Hybrid III Dummies (SID H3s) are included in Appendix A.

Two restrained Side Impact Hybrid III Dummies (SID H3s) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OCWS Side Impact Laboratory Test Procedure which is dated July, 1997. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID H3s were instrumented with the following accelerometers:

1. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)
5. Head triaxial accelerometers (X-, Y- and Z-direction)
6. Upper neck force and moment (X-, Y and Z-direction) load cells

A summary of the Side Impact Hybrid III Dummy (SID H3) configuration and verification test data can be found in Appendix C. A total of 59 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

Injury Criteria	Front SID H3	Rear SID H3
THI (g)	80	93
PEV (g)	74	95

AIR BAG DEPLOYMENT STATUS

	DRIVER	FRONT PASSENGER	REAR PASSENGER
Front Air Bag	No	No	N/A
Knee Bolster Bag	N/A	N/A	N/A
Side Air Bag	N/A	N/A	N/A
Side Curtain Bag	N/A	N/A	N/A

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2003 Hyundai Accent 4-Door Sedan

Vehicle Body Color: Black VIN: KMHCG45C73U424657

Vehicle NHTSA No.: C30501 Month & Year of Manufacture: 10/1/02

Engine Data: 4 Cylinders; - CID; 1.6 Liters; - cc

Engine Placement: - Longitudinal; or X Lateral

Transmission: 4 Speed; - Manual; X Automatic; X Overdrive

Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel Drive

Odometer Reading - km

Supplemental Airbag Restraints:

Front Occupant: X Frontal; - Knee; - Side; - Curtain

Rear Occupant: X Frontal; - Knee; - Side; - Curtain

Options: X A/C; X Power Steering; X Power Brakes; - Power Windows

DATA FROM TIRE PLACARD

Recommended Tire Size: P175/70R13 82T

*Recommended Cold Tire Pressure: 230 kPa FRONT; 230 kPa REAR

DATA FROM TIRE SIDEWALL:

Size of Tires on Test Vehicle: P175/70R13; Manufacturer: Hankook

Tire Pressure with Maximum Capacity Vehicle Load: Front: 300 kPa; Rear: 300 kPa

Treadwear: N/A; Traction: N/A; Temperature: N/A

VEHICLE CAPACITY DATA:

Number of Occupants: 2 Front; 3 Rear; 0 3rd Seat; 5 Total

Type of Front Seats: X Bucket; X Bench; - Split Bench;

Type of Rear Seats: - Bucket; X Bench; - Split Bench; X Contoured

Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob

Type of Rear Seat Back: X Fixed; - Adjustable with - Lever or - Knob

Vehicle Max Capacity Loading = 385.5 kg (A)

No. of Occupants x 68.04 kg. = 340.2 kg (B)

Vehicle Cargo Capacity = 45.3 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front = 358.5 kg Left Rear = 217.0 kg

Right Front = 345.0 kg Right Rear = 210.0 kg

TOTAL FRONT = 703.5 kg TOTAL REAR = 427.0 kg

% of Total Weight = 62.2% % % of Total Weight = 37.8 %

TOTAL WEIGHT = 1130.5 kg

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	=	<u>1130.5</u>	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>45.3</u>	kg (B)
Weight of instrumented SID H3 Dummies (2 X 81.2 kg)	=	<u>162.4</u>	kg (C)
TEST VEHICLE TARGET WEIGHT:	=	<u>1338.2</u>	kg (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 2 SID H3s + CARGO):

Left Front	=	<u>406.0</u>	kg	Left Rear	=	<u>317.0</u>	kg
Right Front	=	<u>352.0</u>	kg	Right Rear	=	<u>266.0</u>	kg
TOTAL FRONT	=	<u>758.0</u>	kg	TOTAL REAR	=	<u>583.0</u>	kg
% of Total Weight	=	<u>56.5%</u>	%	% of Total Weight	=	<u>43.5%</u>	%
TOTAL TEST WEIGHT =		<u>1341.0</u>	kg				

AS TESTED WEIGHT OF TEST VEHICLE (2 SID H3s + CARGO + EQUIPMENT & INSTRUMENTATION):

Left Front	=	<u>392.5</u>	kg	Left Rear	=	<u>300.0</u>	kg
Right Front	=	<u>362.5</u>	kg	Right Rear	=	<u>275.5</u>	kg
TOTAL FRONT	=	<u>755.0</u>	kg	TOTAL REAR	=	<u>575.5</u>	kg
% of Total Weight	=	<u>56.7%</u>	%	% of Total Weight	=	<u>43.3%</u>	%
TOTAL TEST WEIGHT =		<u>1330.5</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

Left Front	<u>638</u>	Right Front	<u>645</u>	Left Rear	<u>633</u>	Right Rear	<u>644</u>
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FULLY LOADED:

Left Front	<u>615</u>	Right Front	<u>635</u>	Left Rear	<u>588</u>	Right Rear	<u>614</u>
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READY FOR TEST:

Left Front	<u>622</u>	Right Front	<u>636</u>	Left Rear	<u>596</u>	Right Rear	<u>615</u>
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Test Vehicle Wheelbase: 2446 millimeters

C.G. = 1058 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side =	<u>4155</u>	millimeters
Left Side =	<u>4155</u>	millimeters
Centerline =	<u>4260</u>	millimeters

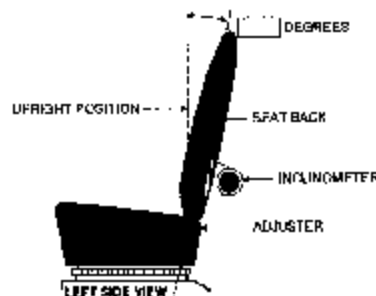
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



FRONT SEAT ASSEMBLY

FRONT SEAT CUSHION PLACEMENT: Mid-position (detent 9 of 0 to 18 or 107 mm)

Total Length of Adjustment Travel: 214 millimeters

Total Number of Adjustment Positions or Detents: 19

FRONT SEAT BACK ADJUSTMENT POSITION:

Seat Back Torso Angle: 25.5 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: Not Adjustable

ADJUSTABLE STEERING COLUMN POSITION: Not Adjustable

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Open Right Rear: Removed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

45.04 liters (Fuel Tank Usable Capacity)

42.01 liters used for test (92%-94% of Fuel Tank Usable Capacity)

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase = 2446 millimeters

Impact Point is 283 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 284 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2003 Hyundai Accent

Body Style: 4-Door Sedan

VIN: KMHCG45C73U424657

NHTSA No.: C30501

Test Date: March 21, 2003

Overall Length = 4260 millimeters; Overall Width = 1675 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front = 392.5 kg Left Rear = 300.0 kg

Right Front = 362.5 kg Right Rear = 275.5 kg

TOTAL FRONT = 755.0 kg TOTAL REAR = 575.5 kg

TOTAL VEHICLE WEIGHT 1330.5 kg

Wheelbase = 2446 millimeters

Longitudinal C.G. from Center of Front Axle = 1058 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 1 mm rearward of nominal impact ref. line (Lateral)

Actual Impact Point is 8 mm below nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (226 mm above ground) = 185 millimeters

2. LEVEL 2 (464 mm above ground) = 346 millimeters

3. LEVEL 3 (552 mm above ground) = 306 millimeters

4. LEVEL 4 (820 mm above ground) = 258 millimeters

5. LEVEL 5 (1310 mm above ground) = 54 millimeters

Maximum Post-Test Intrusion = 346 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification SID H3/015

SID H3/016

Restraints Used 3-Point Safety Belt

3-Point Safety Belt

INSTRUMENTATION:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 3

 Offboard = 6

 TOTAL = 9

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501

MDB FACT MANUFACTURER AND SERIAL NUMBER:

Plascore Inc. 028C0103-4 023B1102

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

Overall Width of Framework Carriage	=	<u>1250</u>	millimeters
Overall Length of MDB (incl. honeycomb impact face)	=	<u>4120</u>	millimeters
Wheelbase of Framework Carriage	=	<u>2590</u>	millimeters
Tread of Framework Carriage (Front & Rear)	=	<u>1875</u>	millimeters
C.G. Location Rearward of Front Axle	=	<u>1104</u>	millimeters

MDB WEIGHT:

Left Front	=	<u>409.5</u>	kg	Left Rear	=	<u>281.5</u>	kg
Right Front	=	<u>372.5</u>	kg	Right Rear	=	<u>299.0</u>	kg
TOTAL FRONT =		<u>782.0</u>	kg	TOTAL REAR =		<u>580.5</u>	kg
TOTAL MDB WEIGHT =		<u>1362.5</u>	kg				
Impact Angle (MDB C/L. to Target Vehicle C/L.)	=	<u>90</u>	degrees				
Impact Speed	=	<u>61.31</u>	kph				

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A at Center of Bumper Level	=	<u>74</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>63</u>	millimeters
3. Row C at Mid Level	=	<u>125</u>	millimeters
4. Row D at Top of Stack Level	=	<u>133</u>	millimeters

INSTRUMENTATION:

Number of MDB Data Channels	=	<u>5</u>
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DATA SHEET 4

POST-TEST OBSERVATIONS

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501

TEST DUMMY INFORMATION AND CONTACT POINTS:

DESCRIPTION	FRONT SEAT	REAR SEAT
ATD Type/Serial No.	SID H3/015	SID H3/016
Head Contact:	The side of the face to the left shoulder; The top and back of the head to the B-pillar and seatbelt D-ring.	The side, top and back of the head to the C-pillar.
Upper Torso Contact:	Interior Door Trim Panel	Interior Door Trim Panel
Lower Torso Contact:	Interior Door Trim Panel	Interior Door Trim Panel
Left Knee Contact:	Interior Door Trim Panel	Interior Door Trim Panel
Right Knee Contact:	Left Knee	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

DESCRIPTION	FRONT	REAR
Left Side Doors	Closed, Latched and Inoperable	Closed, Latched and Inoperable
Right Side Doors	Closed, Latched and Operable without tools	Closed, Latched and Operable without tools
Hatch/Other Door	N/A	N/A
Seat Movement (mm)	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

CRITICAL AREAS OF PERFORMANCE	
Pillar Performance	A-, B- and C-pillars were moved inboard during the event with no visible tears or separations
Sill Separation	No visible tears or separations
Windshield Damage	Windshield cracks emanating from the A-pillar were present
Window Damage	Left side windows shattered upon impact
Other Notable Effects	None

AIR BAG DEPLOYMENT STATUS:

	DRIVER	FRONT PASSENGER	REAR PASSENGER
Front Air Bag	No	No	N/A
Knee Bolster Bag	N/A	N/A	N/A
Side Air Bag	N/A	N/A	N/A
Side Curtain Bag	N/A	N/A	N/A

MDB LEFT EDGE IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	± 50 mm	1 mm
Vertical Offset	mm	± 20 mm	8 mm

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID H3 INSTRUMENTATION DATA

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501

		Front Dummy ID# 015				Rear Dummy ID# 016			
		Pos. Direction		Neg. Direction		Pos. Direction		Neg. Direction	
		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
HEAD ACCELERATIONS:									
Longitudinal	X	35.1	36.1	-14.9	92.3	11.1	173.8	-17.2	63.6
Lateral	Y	179.5	36.1	-8.7	83.8	162.0	51.1	-15.5	65.6
Vertical	Z	26.3	64.1	-14.3	38.9	26.0	39.9	-59.6	56.7
Resultant	R	183.0	36.1	0.0	-7.9	163.0	51.1	0.0	-12.9
HIC		625.7				1260.2			
NECK FORCES:									
Longitudinal	X	38.8	199.9	-622.6	51.4	928.6	59.4	-148.4	115.8
Lateral	Y	52.8	139.1	-728.9	36.2	63.2	143.2	-1688.8	58.6
Vertical	Z	965.7	64.2	-838.4	38.7	956.6	40.0	-2377.1	57.1
Resultant	R	1074.4	64.2	0.1	-14.9	3020.0	57.1	0.1	-7.9
NECK MOMENTS:									
X		6.3	116.3	-63.7	39.3	21.0	177.1	-87.5	53.3
Y		55.5	75.7	-60.8	48.5	41.3	76.3	-7.3	199.9
Z		41.6	69.0	-11.2	34.3	5.0	63.7	-20.2	54.7
Resultant	R	68.6	51.3	0.0	-1.6	90.3	53.6	0.0	-17.1
RIB ACCELERATIONS:									
Upper Rib Lateral	Y	61.0	26.9	-14.5	62.5	88.9	37.5	-13.6	61.2
Upper Rib Lateral	Y(R)	64.0	26.9	-17.5	63.1	84.6	37.5	-13.0	61.3
Lower Rib Lateral	Y	68.0	29.4	-13.5	85.0	94.7	36.3	-28.7	65.0
Lower Rib Lateral	Y(R)	68.9	29.4	-13.2	85.0	101.2	36.3	-27.4	65.0
SPINE ACCELERATIONS:									
Lower Lateral	Y	92.8	31.9	-29.1	65.6	90.8	41.8	-20.6	65.6
Lower Lateral	Y(R)	92.5	31.9	-29.7	65.6	89.7	41.9	-20.2	65.7
PELVIC ACCELERATIONS:									
Lateral	Y	74.3	33.7	-8.9	53.7	94.6	32.5	-11.7	71.2
Lateral	Y(R)	75.8	33.7	-9.0	53.7	92.7	32.5	-11.3	71.2

REFERENCE: Positive Direction: Longitudinal (X) = forward; Lateral (Y) = to right; Vertical (Z) = down

Note: Rib, Spine and Pelvis data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.

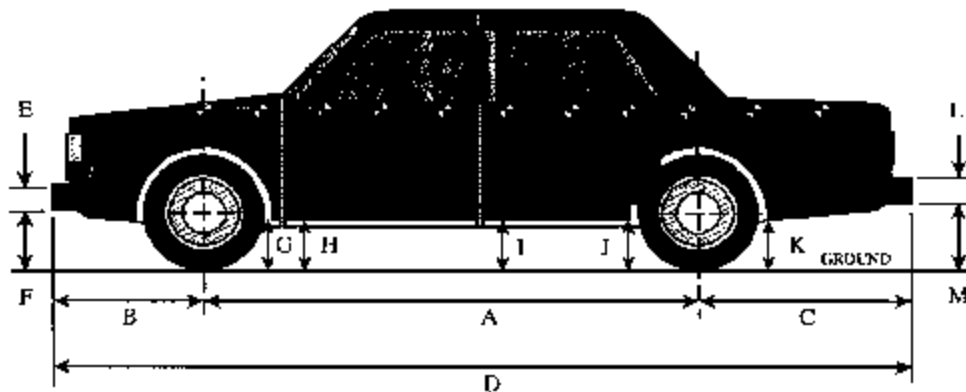
Head Accelerations and Neck Forces are filtered at SAE Class 1000, Neck Moments are filtered at SAE Class 600.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



LEFT SIDE VIEW

NOTE: all dimensions are in millimeters with tolerance of ± 3 mm

	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	Δ CHANGE
A	2440	2446	2391	-55
B	861	-	888	27
C	959	-	964	5
D	4260	-	4243	-17
E	319	-	319	0
F	218	213	238	25
G	204	184	223	39
H	202	182	241	59
I	208	179	223	44
J1	179	143	157	14
J2	215	179	193	14
K	256	214	226	12
L	285	-	285	0
M	320	278	292	14
N	632	-	553	-79
O	642	-	650	8
P	1127	-	1049	-78
Q	471	-	467	-4
R	4155	-	4156	1
S	4155	-	4116	-39
T	1675	-	1524	-151

D = Length at Centerline

E&I = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-Pillar

J1 = To Pinch Weld

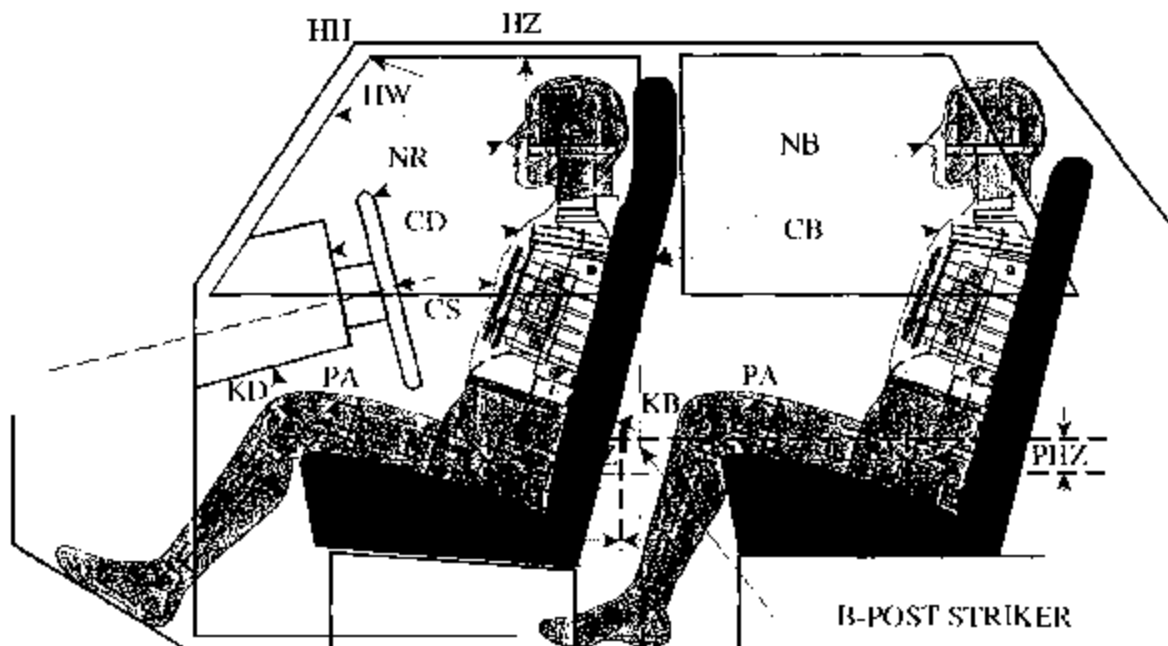
J2 = To Sill

DATA SHEET 7

SID H3 LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
REAR DUMMY PHX & PHZ
MEASUREMENTS FOR A 4-DOOR
VEHICLE WOULD USE THE C POST
STRIKER AS A REFERENCE POINT

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

	DRIVER ID# 015	LEFT REAR PASS. ID# 016
HH	445	N/A
HW	628	N/A
HZ	170	164
NR/NB	514	515
CD/CB	546	422
CS	324	N/A
KDL(KDA°)/KBL(KDA°)	167 / (30 °)	143 / (35 °)
KDR(KBA°)/KBR(KBA°)	147 / (34 °)	132 / (40 °)
PA°	23.6°	24.8°
PHX	178	256
PHZ	104	250

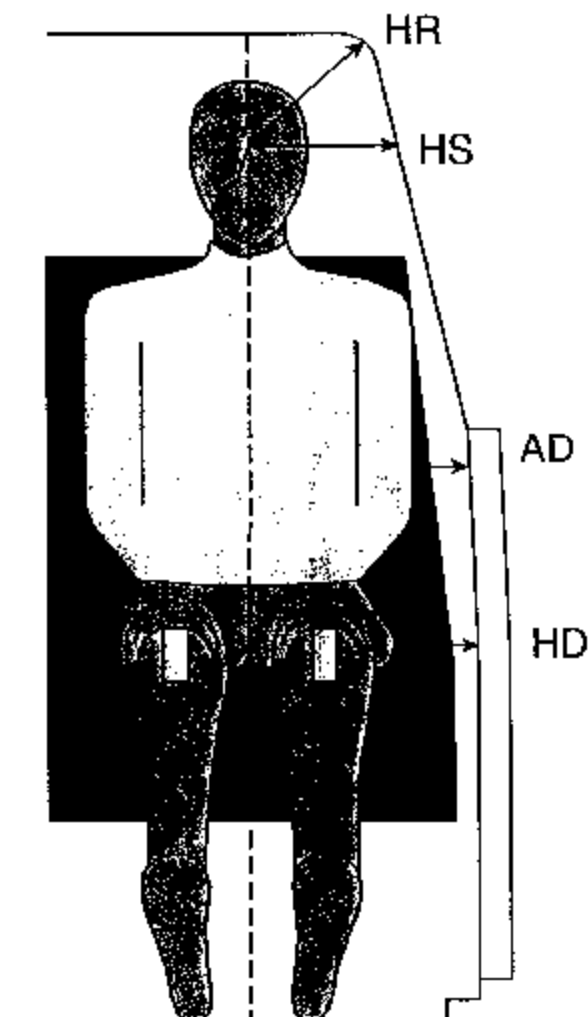
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID H3 LATERAL CLEARANCE DIMENSIONS

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

	DRIVER ID # 015				LEFT REAR PASS. ID # 016			
HR	187				208			
HS	303				247			
AD*	LOWER:	112	UPPER:	112	LOWER:	132	UPPER:	131
HD	139				190			

* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID H3 arm segment to the closest part of the vehicle side.

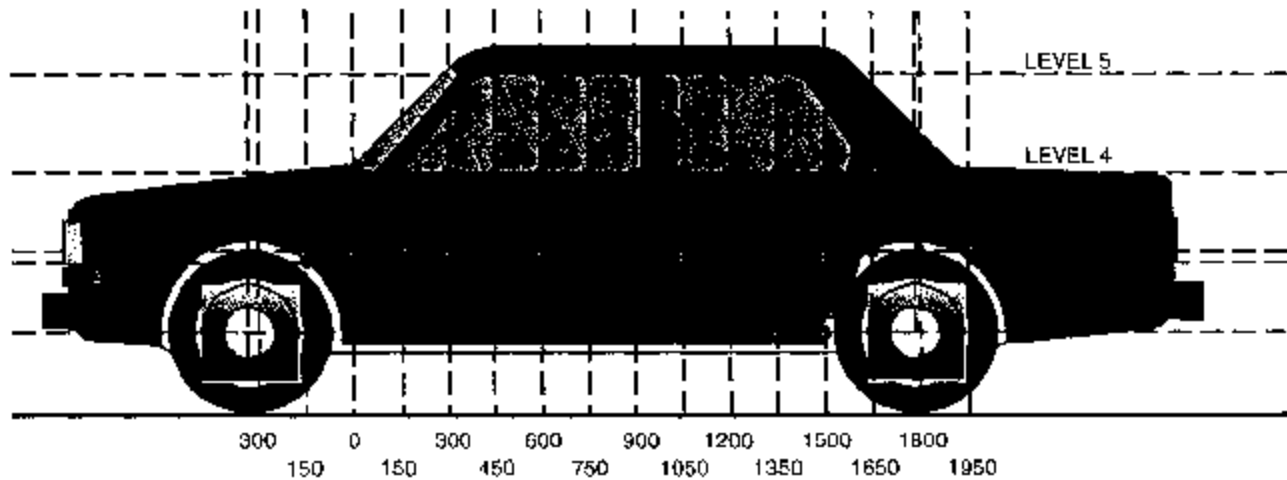
Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID H3 arm segment to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

- LEVEL 5 - WINDOW TOP
- LEVEL 4 - WINDOW SILL
- LEVEL 3 - MID-DOOR
- LEVEL 2 - OCCUPANT H-POINT
- LEVEL 1 - AXLE CENTERLINE HEIGHT OR SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.

Measurements Along the Vertical 750 mm Line Shown Above:

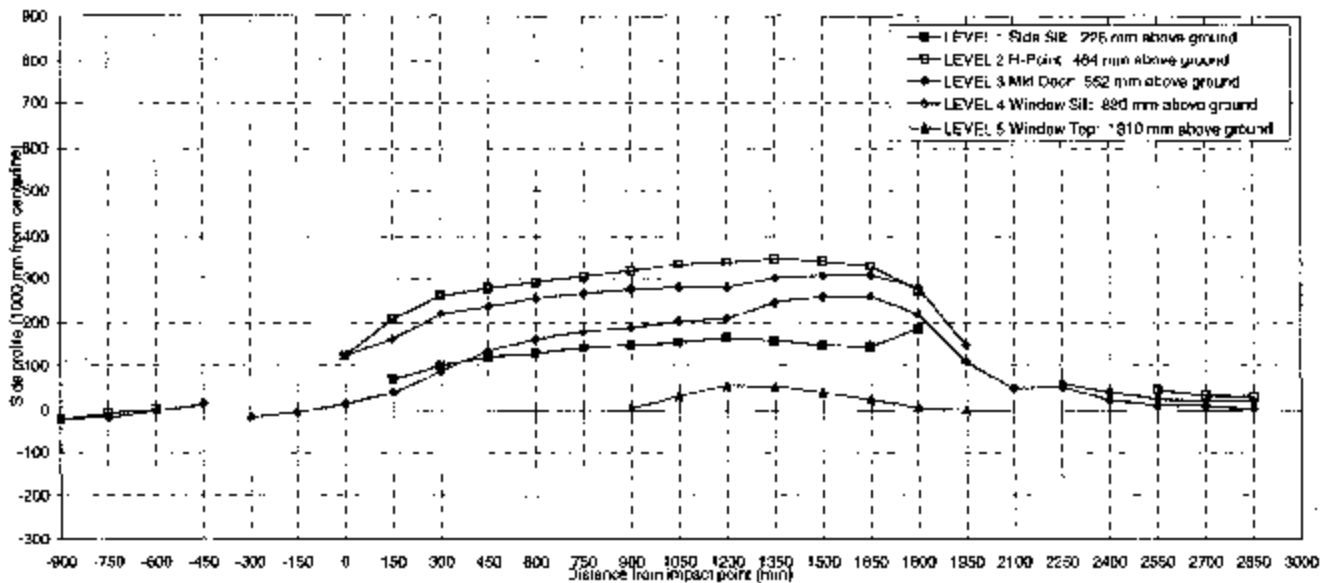
Level 5 @ Window Top	=	<u>1310</u>	millimeters
Level 4 @ Window Sill	=	<u>820</u>	millimeters
Level 3 @ Mid Door	=	<u>552</u>	millimeters
Level 2 @ Occupant H-Point	=	<u>464</u>	millimeters
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>226</u>	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



NOTE: All dimensions are in millimeters with a tolerance of ± 3 mm

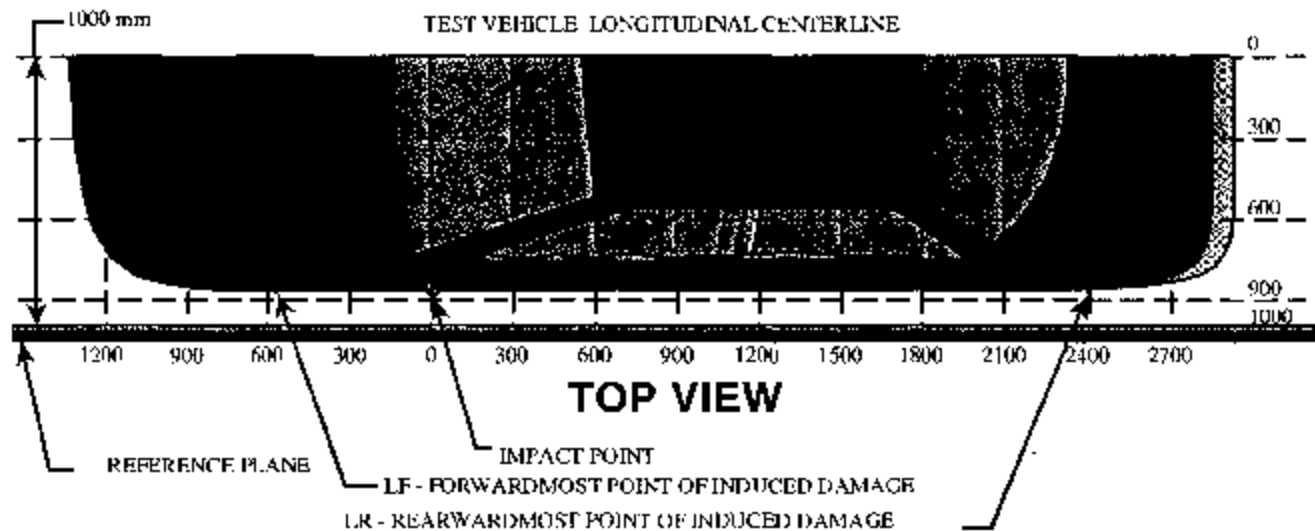
		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
LEVEL	HEIGHT (mm)		-900	-750	-600	-450	-300	-150	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000	
LEVEL 1 SIDE SILL	226	PRE	-	-	-	-	-	-	223	229	238	230	230	234	228	210	232	234	227	-	-	-	-	-	-	-	-	-	
		POST	-	-	-	-	-	-	308	329	349	359	372	379	388	395	389	379	379	412	-	-	-	-	-	-	-		
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	70	100	121	129	142	149	154	165	159	147	145	183	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
LEVEL 2 H POINT	464	PRE	261	218	193	-	-	-	175	181	184	180	179	177	170	175	178	181	179	188	-	-	-	-	201	216	249	-	
		POST	290	210	195	-	-	-	185	480	460	470	482	494	502	532	524	520	507	499	-	-	-	-	342	249	279	-	
		CRUSH	-21	-6	2	N/A	N/A	N/A	210	259	276	290	305	317	332	337	346	339	328	271	N/A	N/A	N/A	N/A	44	33	30	N/A	
LEVEL 3 MID DOOR	552	PRE	290	243	211	173	-	-	174	175	173	172	176	174	175	179	180	182	187	172	168	-	179	192	210	228	256	-	
		POST	270	225	209	186	-	-	338	393	409	426	441	448	453	457	479	487	473	450	356	-	217	232	234	249	276	-	
		CRUSH	-20	-13	-2	13	N/A	N/A	162	220	236	254	265	274	278	273	239	305	306	278	148	N/A	58	10	24	21	20	N/A	
LEVEL 4 WINDOW SILL	820	PRE	-	-	-	-	464	372	247	241	238	237	232	232	232	232	231	230	229	225	225	228	228	241	250	258	282	-	
		POST	-	-	-	-	448	308	285	326	373	400	411	422	434	441	476	487	487	444	334	276	279	264	261	270	286	-	
		CRUSH	N/A	N/A	N/A	N/A	-16	-4	78	87	135	163	179	190	202	209	245	257	258	219	109	48	51	23	11	12	4	N/A	
LEVEL 5 WINDOW TOP	1310	PRE	-	-	-	-	-	-	-	-	-	-	-	483	459	455	490	450	455	471	511	-	-	-	-	-	-	-	
		POST	-	-	-	-	-	-	-	-	-	-	-	489	490	509	502	489	479	477	537	-	-	-	-	-	-	-	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	31	52	52	39	24	6	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (-).
Rearward of the impact point (toward rear end of vehicle) is considered positive (+).

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm.

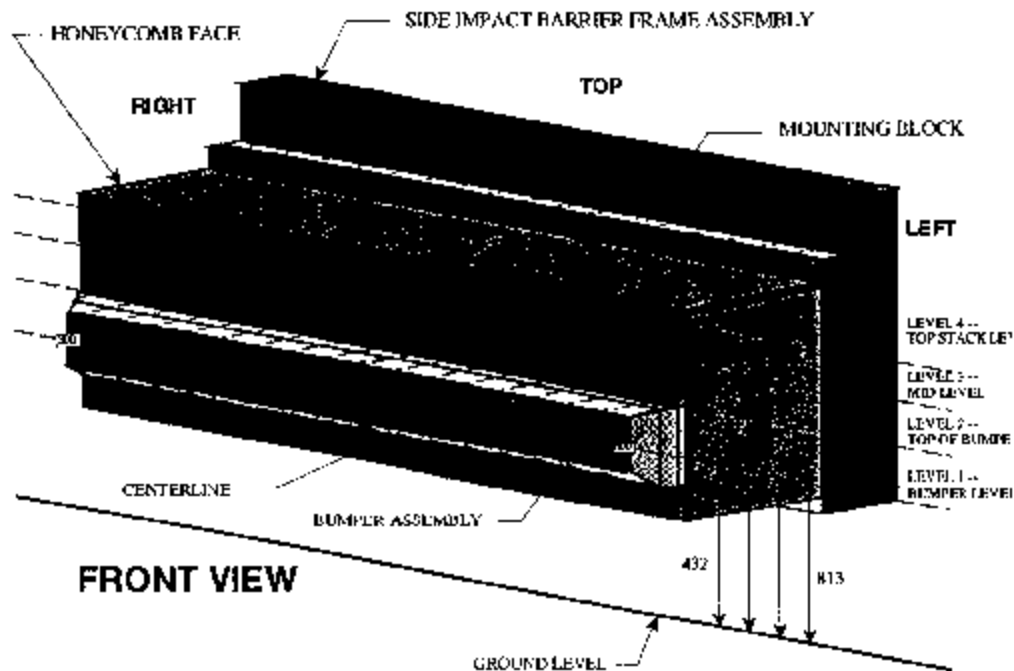
DPD MEASUREMENTS		POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1	(LR = 2590 mm)	263	252	11
2	2044	298	227	71
3	1498	520	181	339
4	952	497	175	322
5	406	454	183	271
6	(LF = -140 mm)	307	309	-2

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



NOTE: Dimensions are shown in millimeters, non

NOTE: All dimensions are in millimeters with a tolerance of ± 3 mm

LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)								DISTANCE LEFT OF CENTER (mm)							
			800	700	600	500	400	300	200	100	100	200	300	400	500	600	700	800
LEVEL 4 TOP STACK	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
		POST	621	591	589	592	596	602	613	612	615	621	626	636	658	686	725	752
		CRUSH	2	-28	-30	-27	-23	-17	-6	-7	-4	2	7	17	39	67	106	133
LEVEL 3 MID LEVEL	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
		POST	620	600	590	590	601	611	622	615	609	612	618	621	627	647	701	744
		CRUSH	1	-19	-29	-29	-18	-8	3	-4	-10	-7	-1	2	8	28	82	125
LEVEL 2 TOP BUMPER	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
		POST	617	628	617	613	613	614	614	614	621	629	631	638	647	655	675	682
		CRUSH	28	9	-2	-6	-6	-5	-5	-5	2	10	12	19	28	36	56	63
LEVEL 1 MID BUMPER	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	519	535
		POST	591	567	554	547	541	543	547	547	544	550	555	561	568	581	593	609
		CRUSH	56	48	36	29	25	25	29	29	26	32	37	43	50	63	74	74

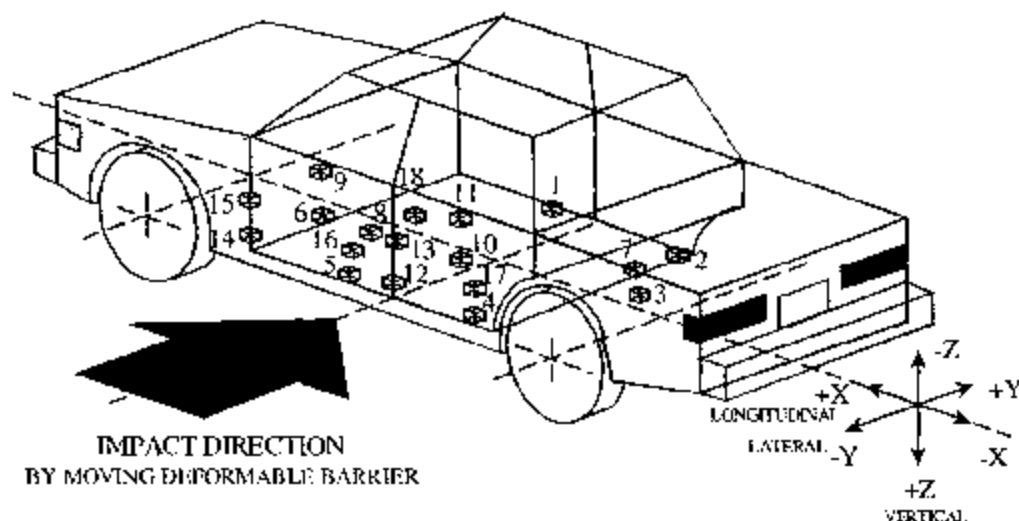
*Heights measured above ground level.

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



- 1-Right Side Sill @ Front Seat
- 2-Right Side Sill @ Rear Seat
- 3-Rear Floorpan Above Axle
- 4-Left Side Sill @ Rear Seat
- 5-Left Side Sill @ Front Seat
- 6-Left Front Door on Centerline
- 7-Right Rear Occupant Compartment
- 8-Midrear of Left Front Door
- 9-Left Front Door Upper Centerline

- 10-Midrear of Left Rear Door
- 11-Left Rear Door Upper Centerline
- 12-Left Lower B-Pillar
- 13-Left Middle B-Pillar
- 14-Left Lower A-Pillar
- 15-Left Middle A-Pillar
- 16-Front Seat Track
- 17-Rear Seat Track
- 18-Vehicle CG

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501

Accel. No.	Location	Coordinates (mm)±3 mm			Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
1	Right Side Sill at Front Seat	2603	665	-205	pos.	+	28.0	5.8	4.0	31.0	†	†
					neg.	†	-3.3	133.9	-8.1	7.8	†	†
2	Right Side Sill at Rear Seat	1492	433	74	pos.	5.7	29.2	6.2	7.4	33.8	29.8	6.3
					neg.	-8.4	-2.6	133.0	-6.0	16.3	0.0	-13.9
3	Rear Floorpan Above Axle	1040	-15	-395	pos.	4.7	26.9	35.2	11.8	36.1	31.8	30.0
					neg.	-11.1	-2.6	84.9	-14.4	29.6	0.0	-16.5
4	Left Side Sill at Rear Seat	1722	-651	-168	pos.	-	66.0	3.9	-	-	-	-
					neg.	-	-10.7	50.3	-	-	-	-
5	Left Side Sill at Front Seat	2551	-626	-220	pos.	-	57.3	11.5	-	-	-	-
					neg.	-	-14.3	25.3	-	-	-	-
6	Left Front Door on Centerline	**	**	**	pos.	-	**	**	-	-	-	-
					neg.	-	**	**	-	-	-	-
7	Right Rear Occupant Compartment	1792	403	-191	pos.	-	29.2	6.4	-	-	-	-
					neg.	-	-3.1	79.2	-	-	-	-
8	Midrear of Left Front Door	**	**	**	pos.	-	**	**	-	-	-	-
					neg.	-	**	**	-	-	-	-
9	Left Front Door Upper Centerline	**	**	**	pos.	-	**	**	-	-	-	-
					neg.	-	**	**	-	-	-	-
10	Midrear of Left Rear Door	**	**	**	Pos.	-	**	**	-	-	-	-
					neg.	-	**	**	-	-	-	-
11	Left Rear Door Upper Centerline	**	**	**	pos.	-	**	**	-	-	-	-
					neg.	-	**	**	-	-	-	-

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

**Accelerometer was not requested by COTR.

† - Data is Not Accurate - X accelerometer suffered a loose connector

DATA SHEET I3 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501

Accel. No.	Location	Coordinates (mm) ±3 mm			Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
12	Left Lower B-Pillar	1902	-624	-168	pos.	-	192.0	3.4	-	-	-	-
					neg.	-	-109.6	16.9	-	-	-	-
13	Left Middle B-Pillar	1853	-620	-845	pos.	-	174.2	4.0	-	-	-	-
					neg.	-	-101.3	11.3	-	-	-	-
14	Left Lower A-Pillar	2853	-573	-202	pos.	-	37.6	4.3	-	-	-	-
					neg.	-	-3.2	72.6	-	-	-	-
15	Left Middle A-Pillar	2781	-638	-880	pos.	-	54.4	16.6	-	-	-	-
					neg.	-	-46.6	32.4	-	-	-	-
16	Front Seat Track	2025	-525	-165	pos.	-	37.7	11.0	-	-	-	-
					neg.	-	-12.0	26.5	-	-	-	-
17	Rear Seat Track	959	-497	-437	pos.	-	33.9	20.7	-	-	-	-
					neg.	-	-3.4	26.3	-	-	-	-
18	Vehicle CG	2213	55	-320	pos.	16.6	42.9	14.9	16.0	30.3	44.8	15.0
					neg.	-28.9	-11.6	98.6	-22.8	26.2	0.0	-20.0

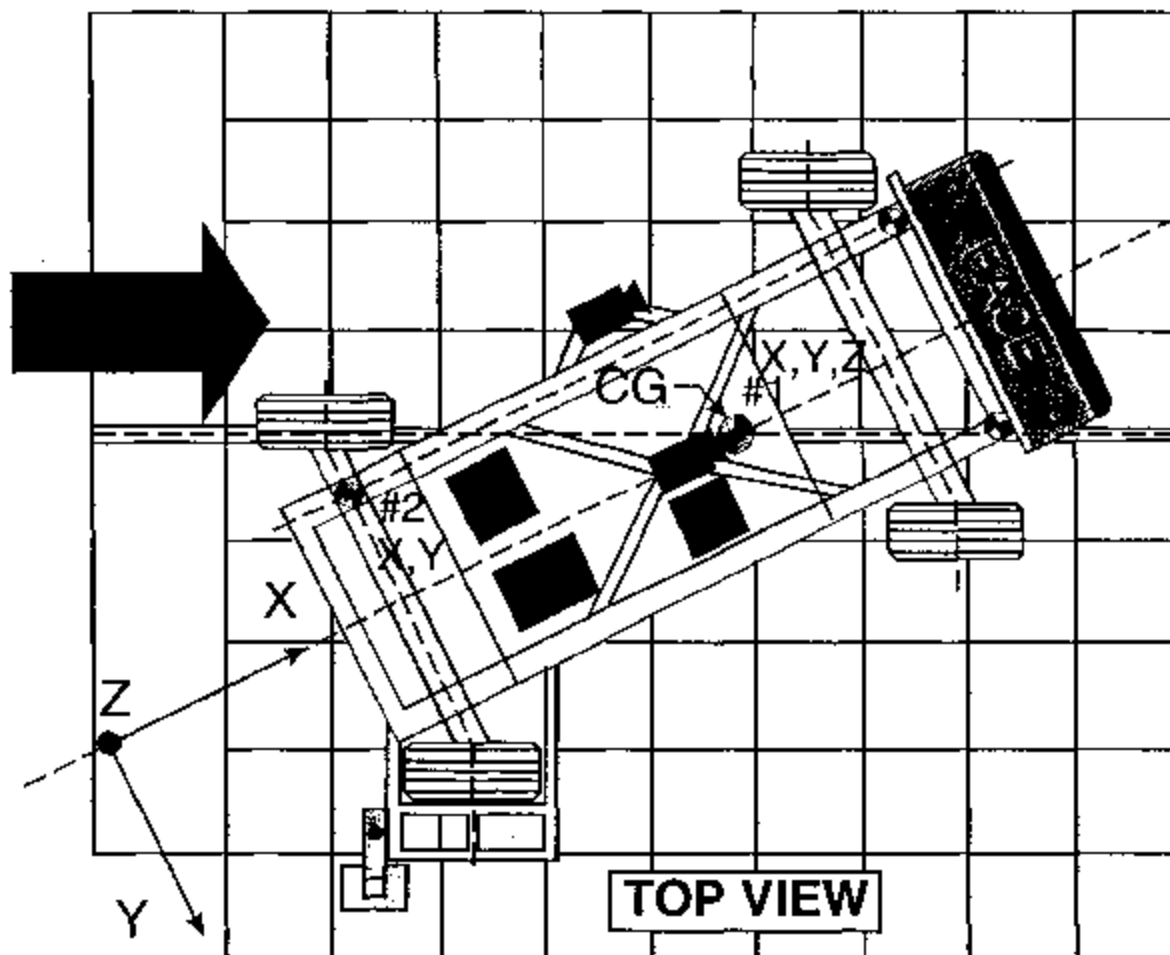
*Reference: X - Rear Bumper (+ Forward) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No. C30501



Accel. No.	Location	Coordinates (millimeters)			Pos. Direct.		Neg. Direct.	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)
1	MDB Center of Gravity							
	Longitudinal... X	1859	0	-330	1.6	109.3	-19.4	38.5
	Lateral..... Y				2.4	55.6	-8.3	43.6
	Vertical..... Z				20.0	84.0	-24.7	101.9
	Resultant..... R				24.7	101.9	0.2	199.9
2	Rear Frame Member							
	Longitudinal... X	386	-660	-660	1.8	89.5	-22.9	29.6
	Lateral..... Y				3.5	22.4	-1.8	62.5

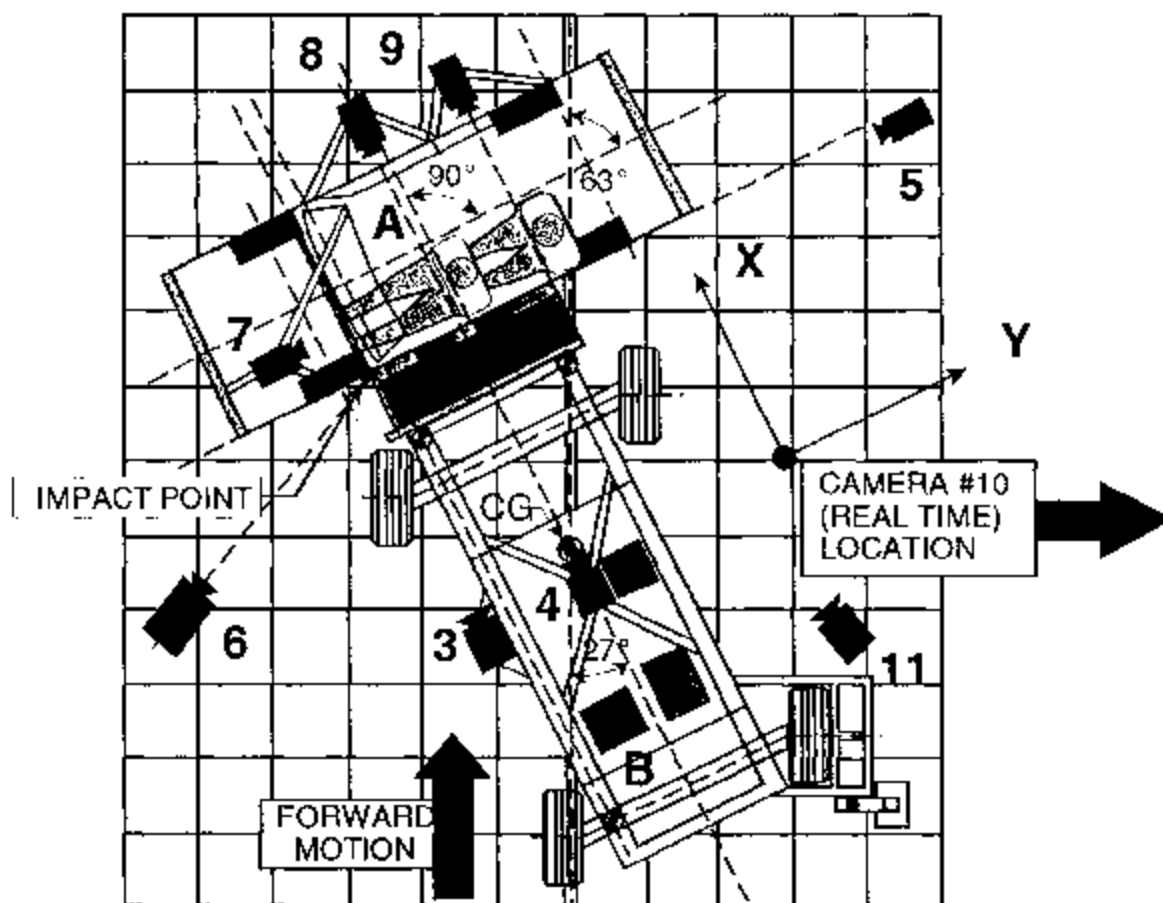
*Reference:
 X = Rear Bumper (+ Forward)
 Y = Vehicle Centerline (+ To Right)
 Z = Ground Level (+ Down)
 All measurements accurate to within ± 3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NIITSA No. C30501



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	150	842	-4880	-90	8	1015
2	Overhead closeup view of impact plane	282	900	-4880	-90	12.5	1015
3	MDB onboard closeup view of impact point	-1470	0	-847	0	13	1030
4	MDB onboard view of driver dummy	-1140	838	-1586	-17	7.5	1030
5	Right side ground level overall view	5	8943	-1063	-3	25	1000
6	Left side ground level overall view	1862	-1783	-1073	-5	13	1005
7	Test vehicle onboard driver front view	538	-406	-1200	-8	13	1030
8	Test vehicle onboard driver side view	1627	838	-970	-6	8	1020
9	Test vehicle onboard passenger side view	1625	1753	-973	-6	8	1015
10	Real time film coverage of test	-	-	-	-	-	24

* Reference (from point of impact): all measurements accurate to within ± 6 mm.

X = (Impact Point) + Forward

Y = (Impact Point) + To Right

Z = (Ground Level) + Down

SECTION 5

FUEL SYSTEM INTEGRITY

DATA SHEET 16

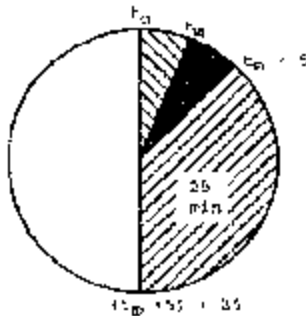
FMVSS 301 FUEL SYSTEM INTEGRITY DATA

NHTSA No.: C30501 TEST DATE: March 21, 2003
 Vehicle Mfg./Make/Model: Hyundai Motor Company 2003 Hyundai Accent 4-Door Sedan

TEST VEHICLE IMPACT TYPE:

- Frontal (48.28 kph)
- Oblique (48.28 kph) with - ° barrier face first
 contacting the - side
 (driver/passenger)
- Rear Moving Barrier (48.28 kph)
- Lateral Moving Barrier (32.19 kph)
- X Side Impact Moving Deformable Barrier (62.0 kph)
 contacting the driver side side
 (driver/passenger)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For five minute period after vehicle motion ceases
3. For next 25 minutes

ACTUAL	MAX ALLOWED
0 g	28 g
0 g	142 g
0 g	28 g/l min.

SOLVENT SPILLAGE DETAILS:

None

DATA SHEET 17

ROLLOVER DATA

Vehicle: 2003 Hyundai Accent 4-Door Sedan

NHTSA No.: C30501



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1-3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	15	seconds	5	minutes	6	minutes	15	seconds	7	minutes
90° - 180°	1	minutes	07	seconds	5	minutes	6	minutes	7	seconds	7	minutes
180°-270°	1	minutes	01	seconds	5	minutes	6	minutes	1	seconds	7	minutes
270°-360°	1	minutes	05	seconds	5	minutes	6	minutes	5	seconds	7	minutes

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180°-270°	0	0	0	N/A
270°-360°	0	0	0	N/A

Note: Record spillage for whole minute intervals only as determined above.

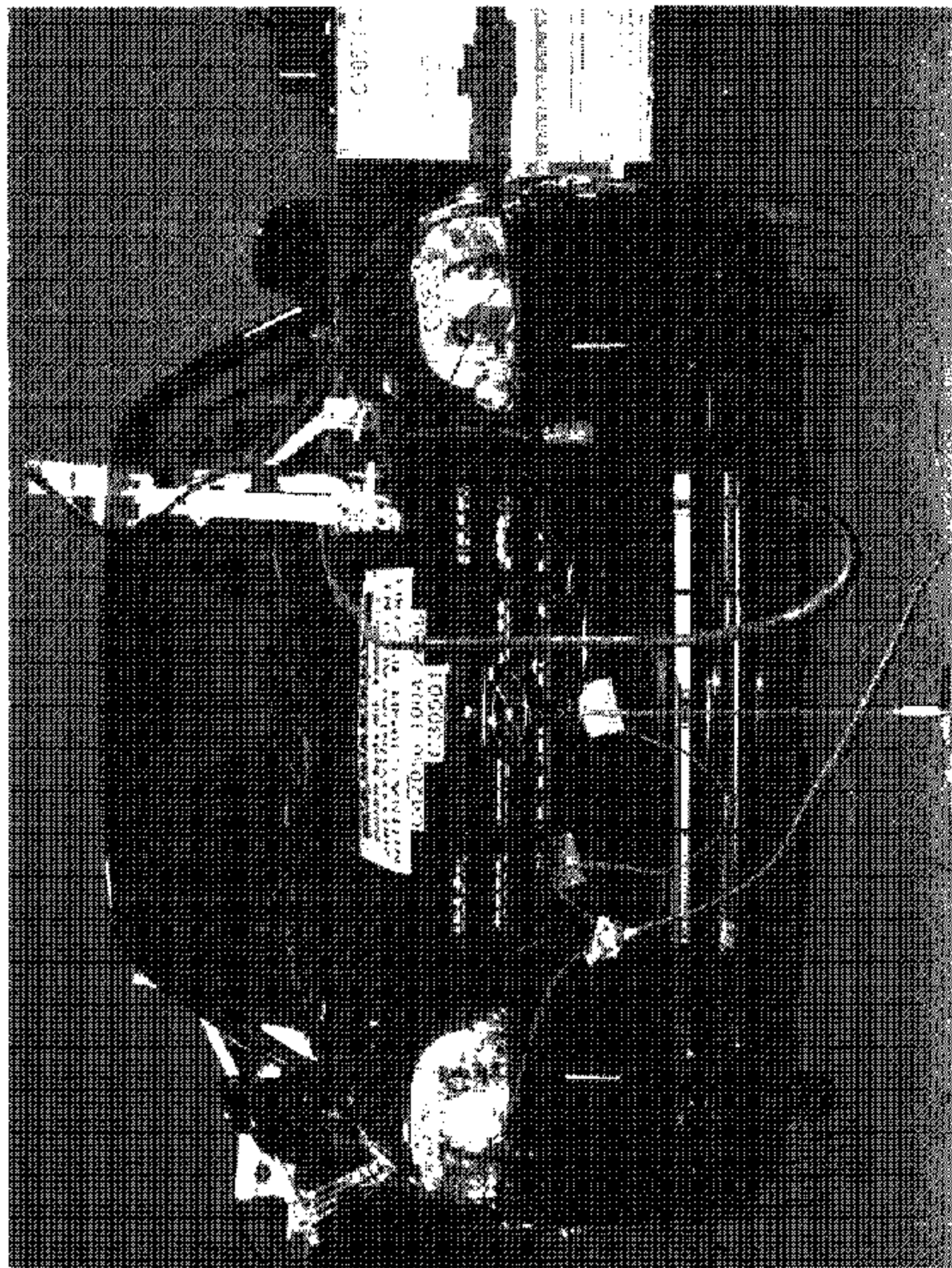
IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0° - 90°	None
90° - 180°	None
180°-270°	None
270°-360°	None

APPENDIX A
PHOTOGRAPHS

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(continued)



Figure A-2 POST-TEST FRONTAL VIEW OF TEST VEHICLE

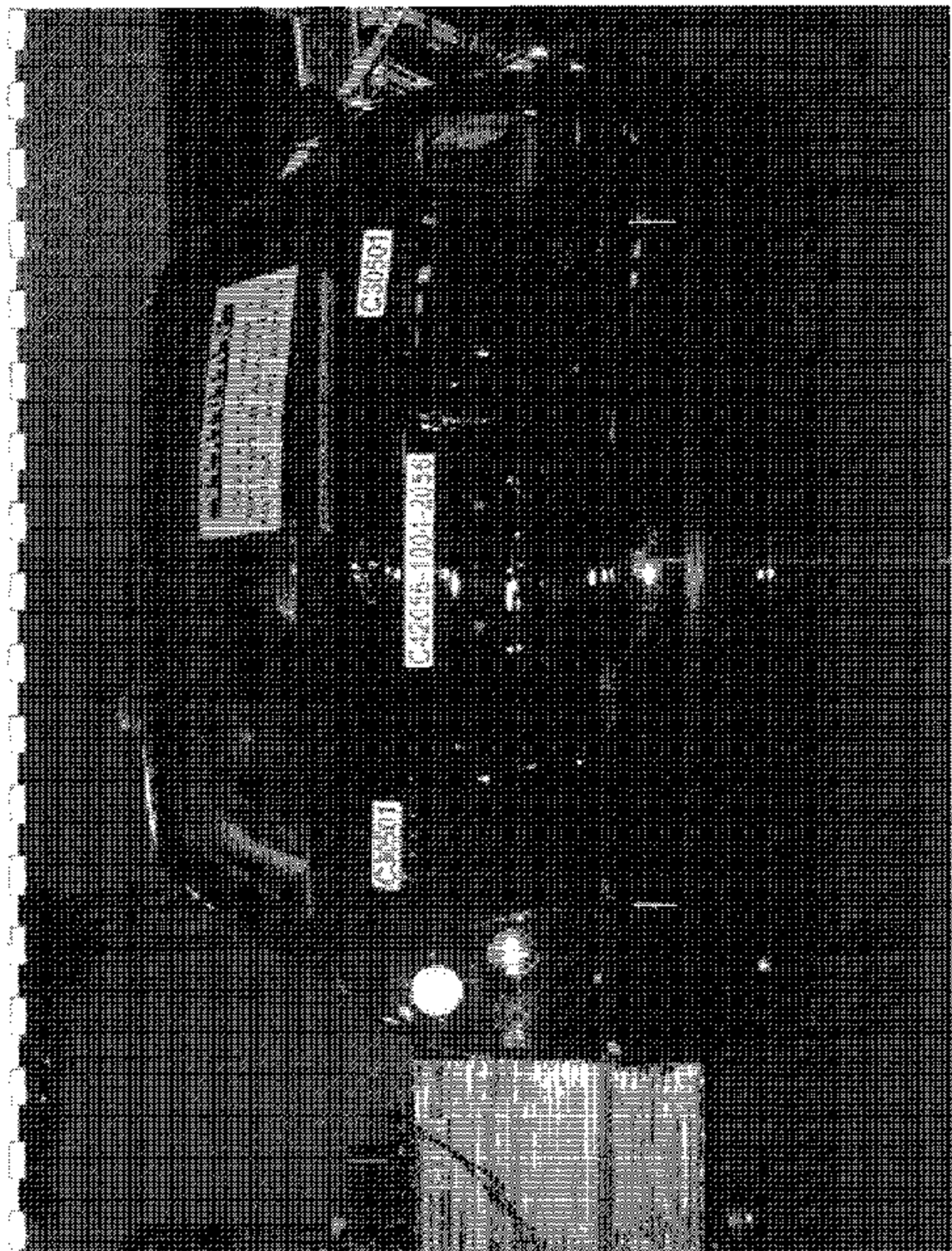


Figure A-3 PRE-TEST REAR VIEW OF TEST VEHICLE

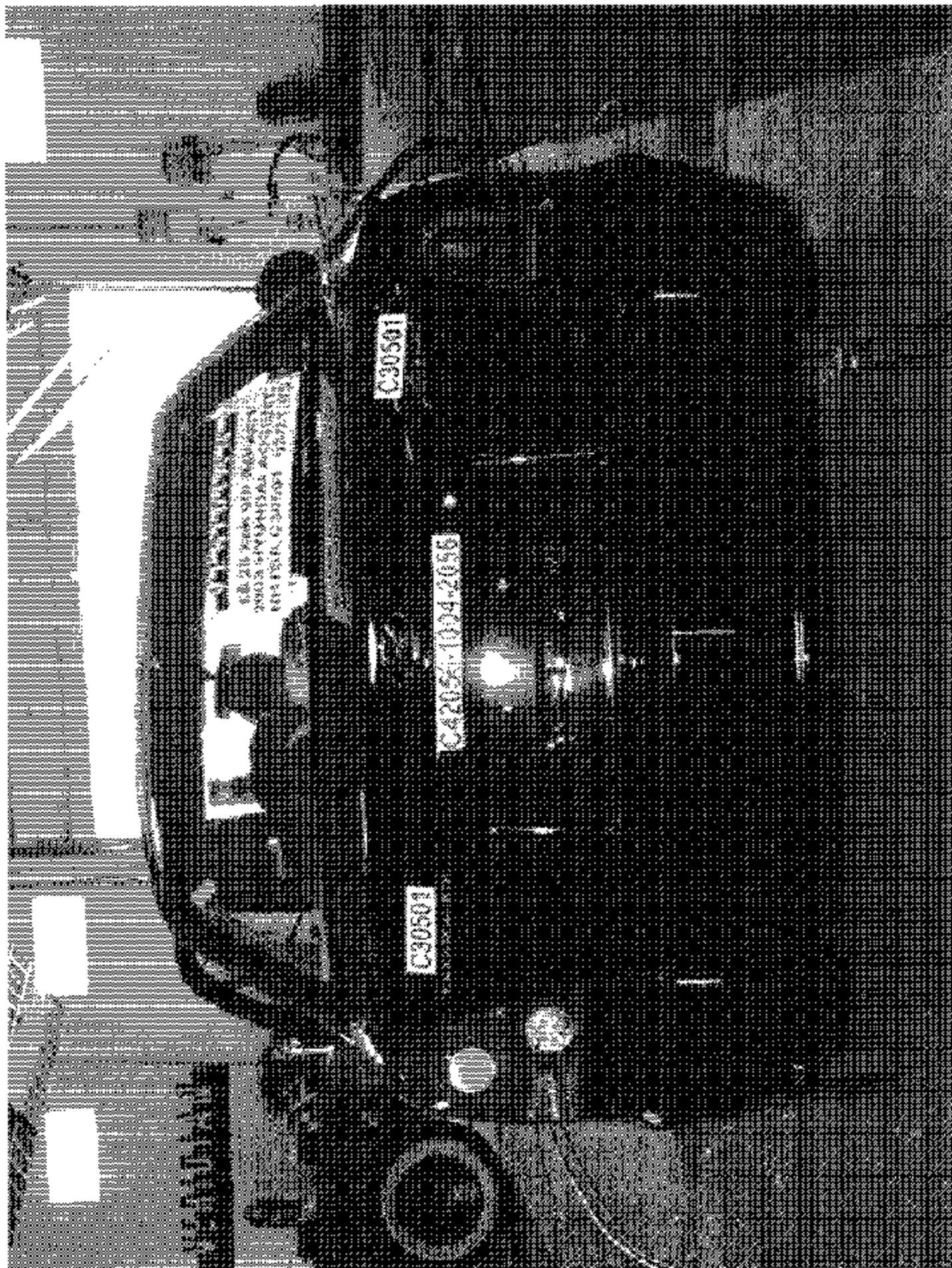


Figure A-4 POST-TEST REAR VIEW OF TEST VEHICLE

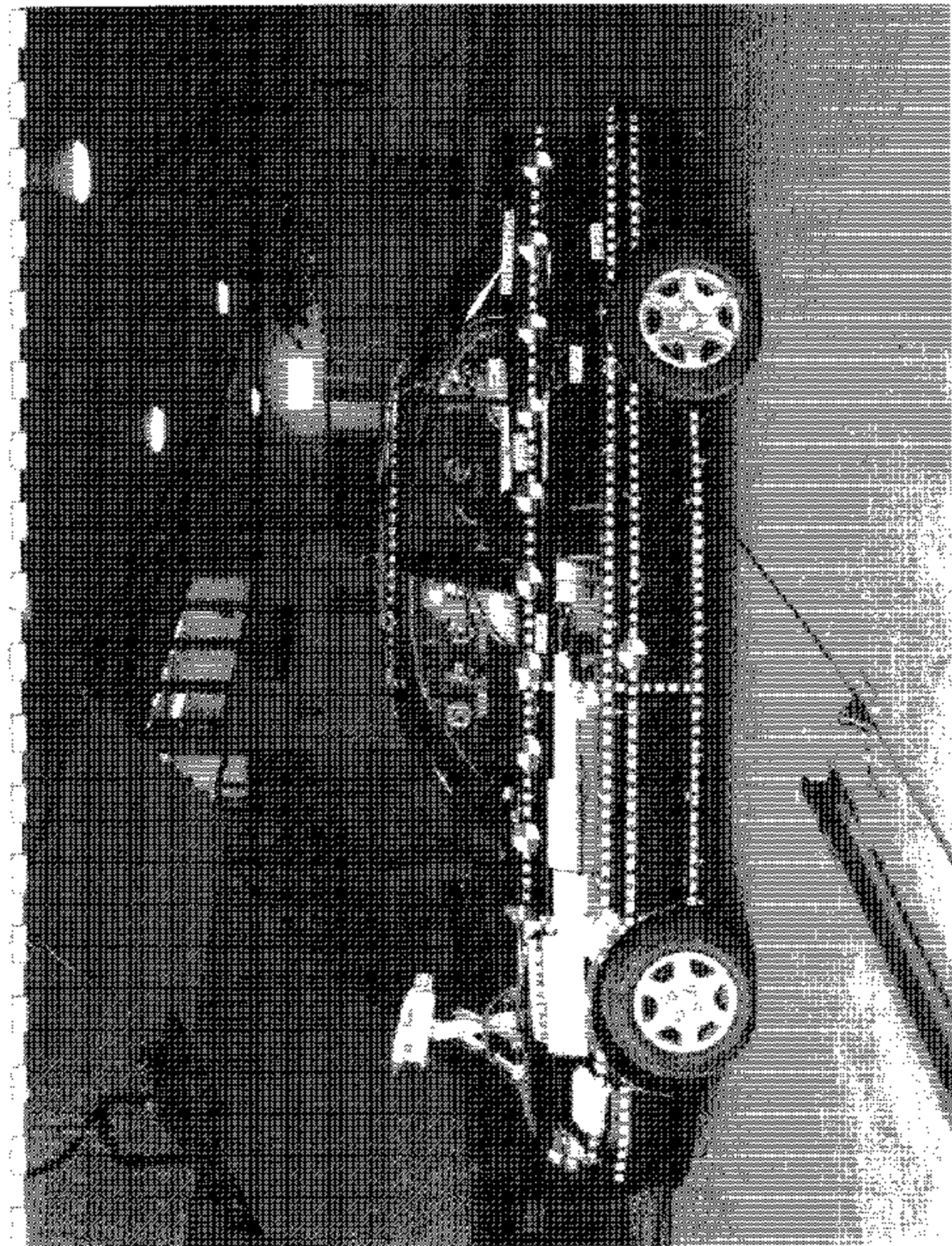


Figure A-5 PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

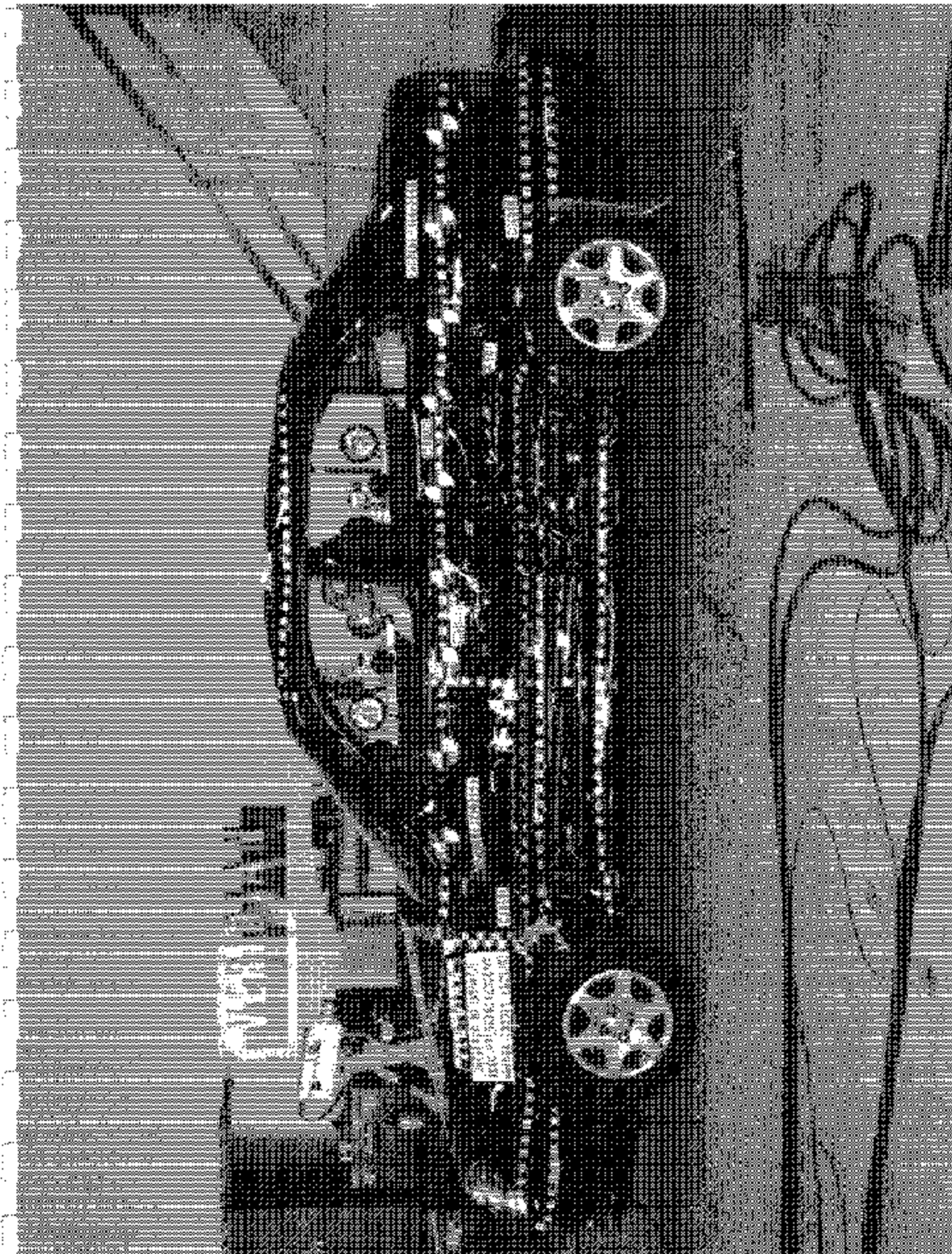


Figure A.6 POST-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

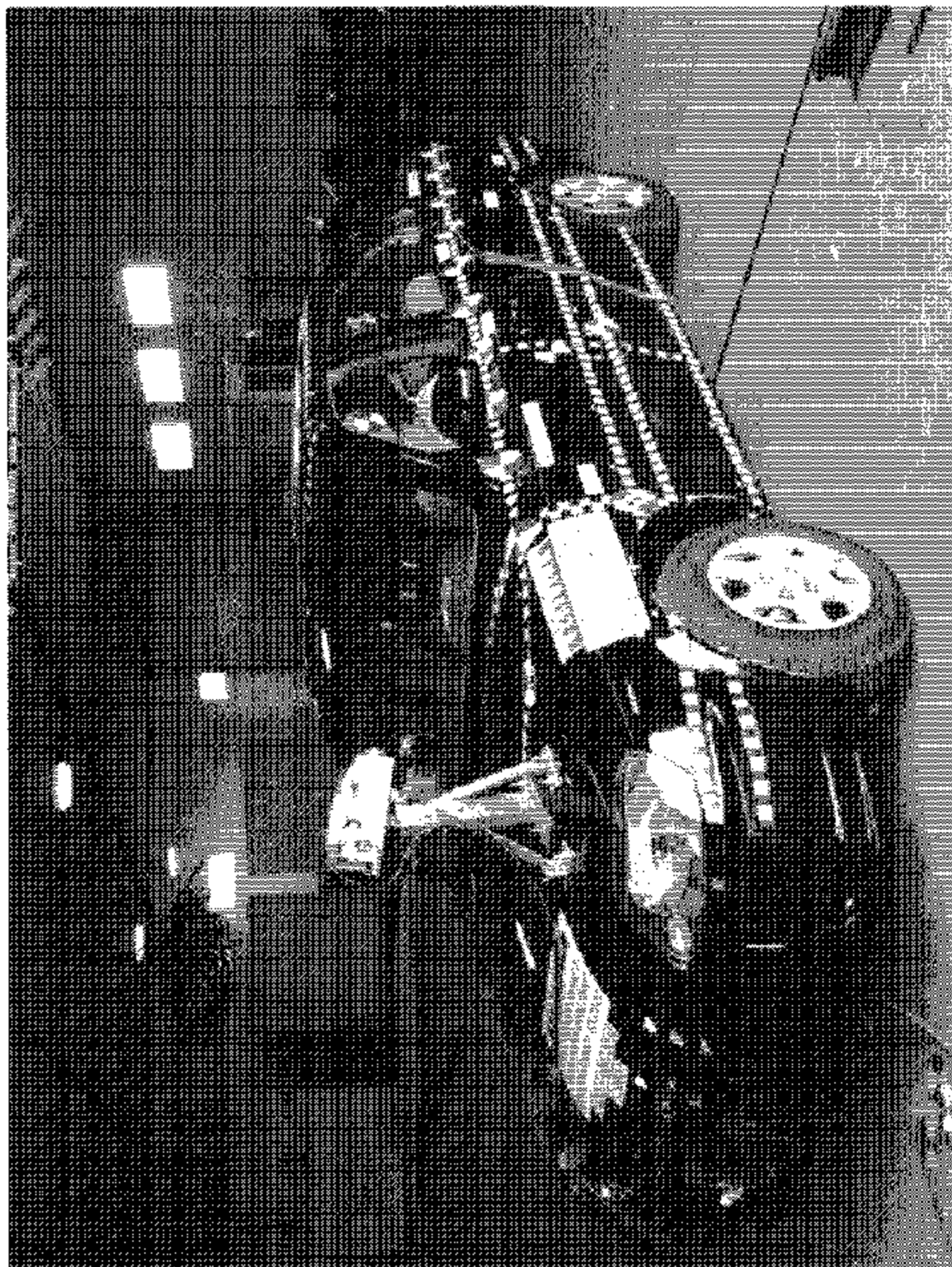


Figure A-7 PRE-TEST LEFT FRONT VIEW OF TEST VEHICLE

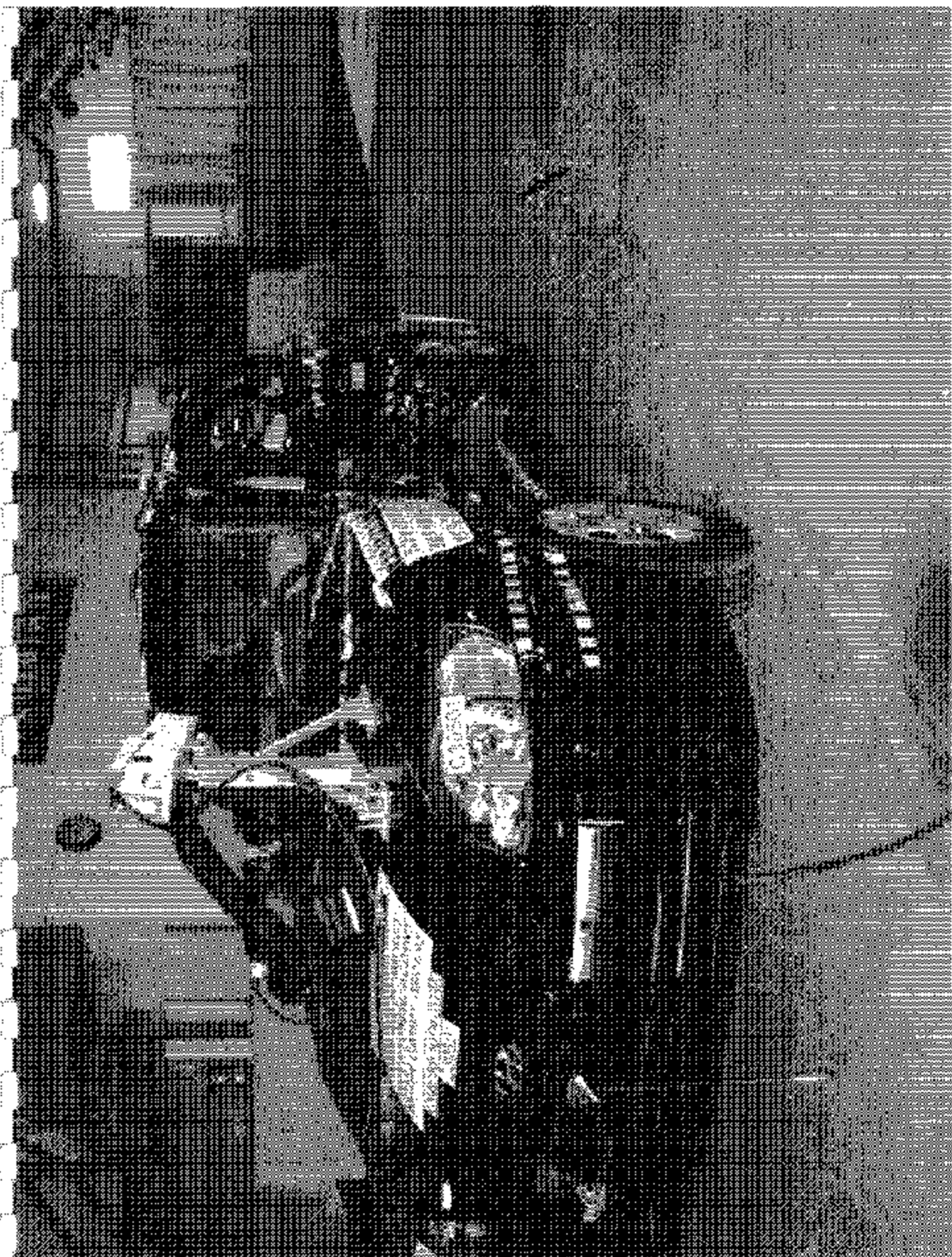


Figure A-8 POST-TEST LEFT FRONT VIEW OF TEST VEHICLE

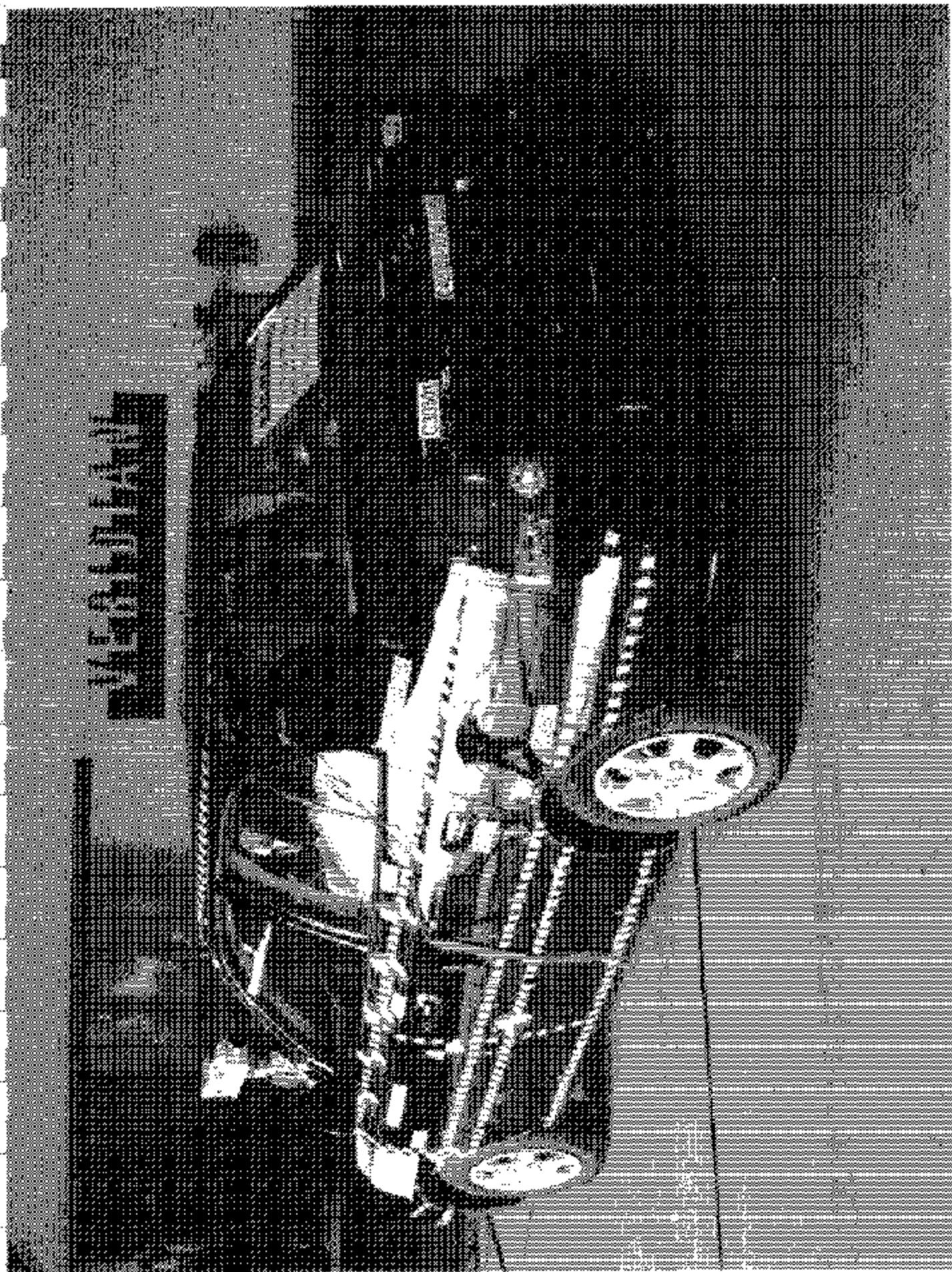


Figure A-9 PRE-TEST LEFT REAR VIEW OF TEST VEHICLE

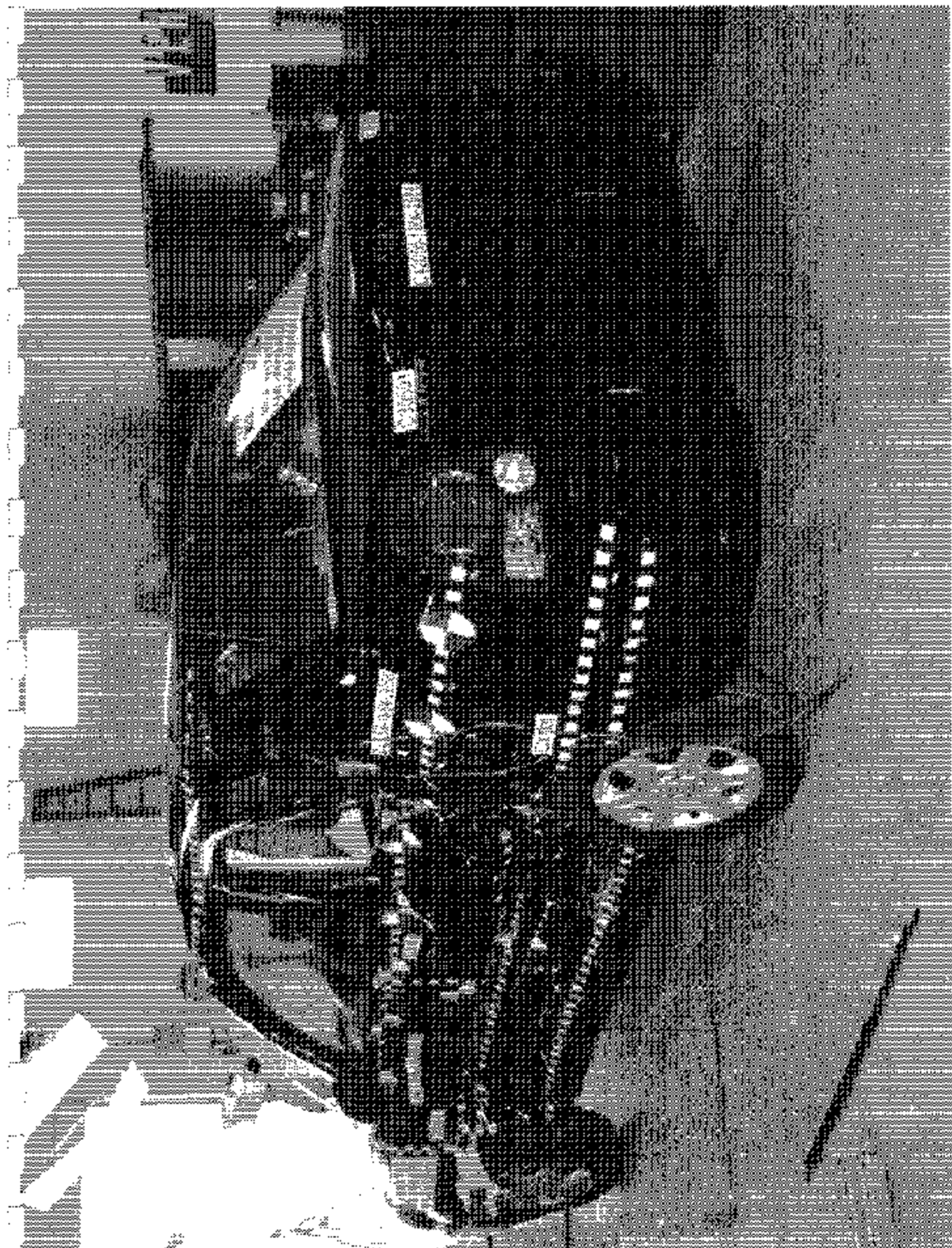


Figure A-10 POST-TEST LEFT REAR VIEW OF TEST VEHICLE

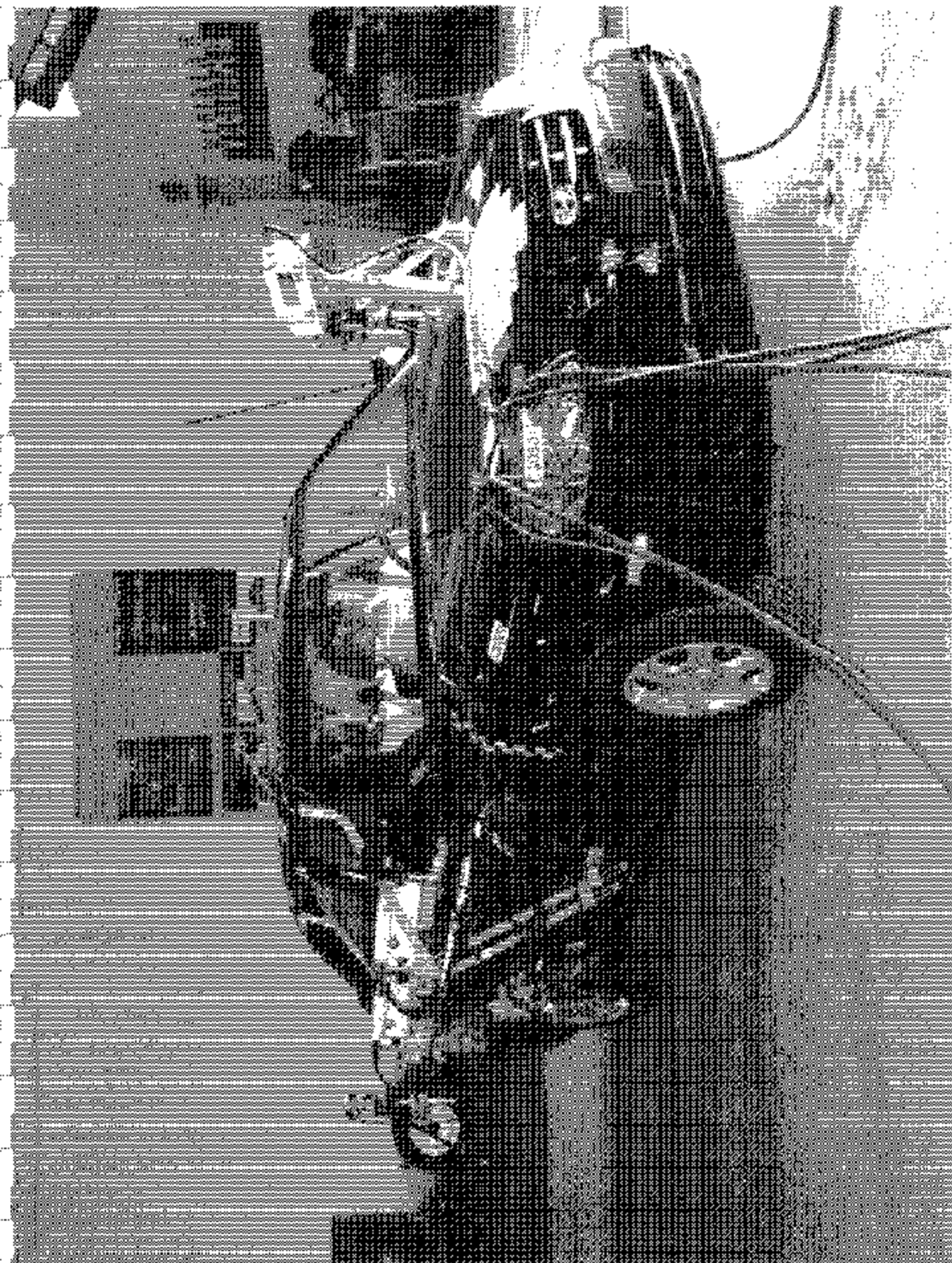


Figure A-11 PRE-TEST RIGHT FRONT VIEW OF TEST VEHICLE

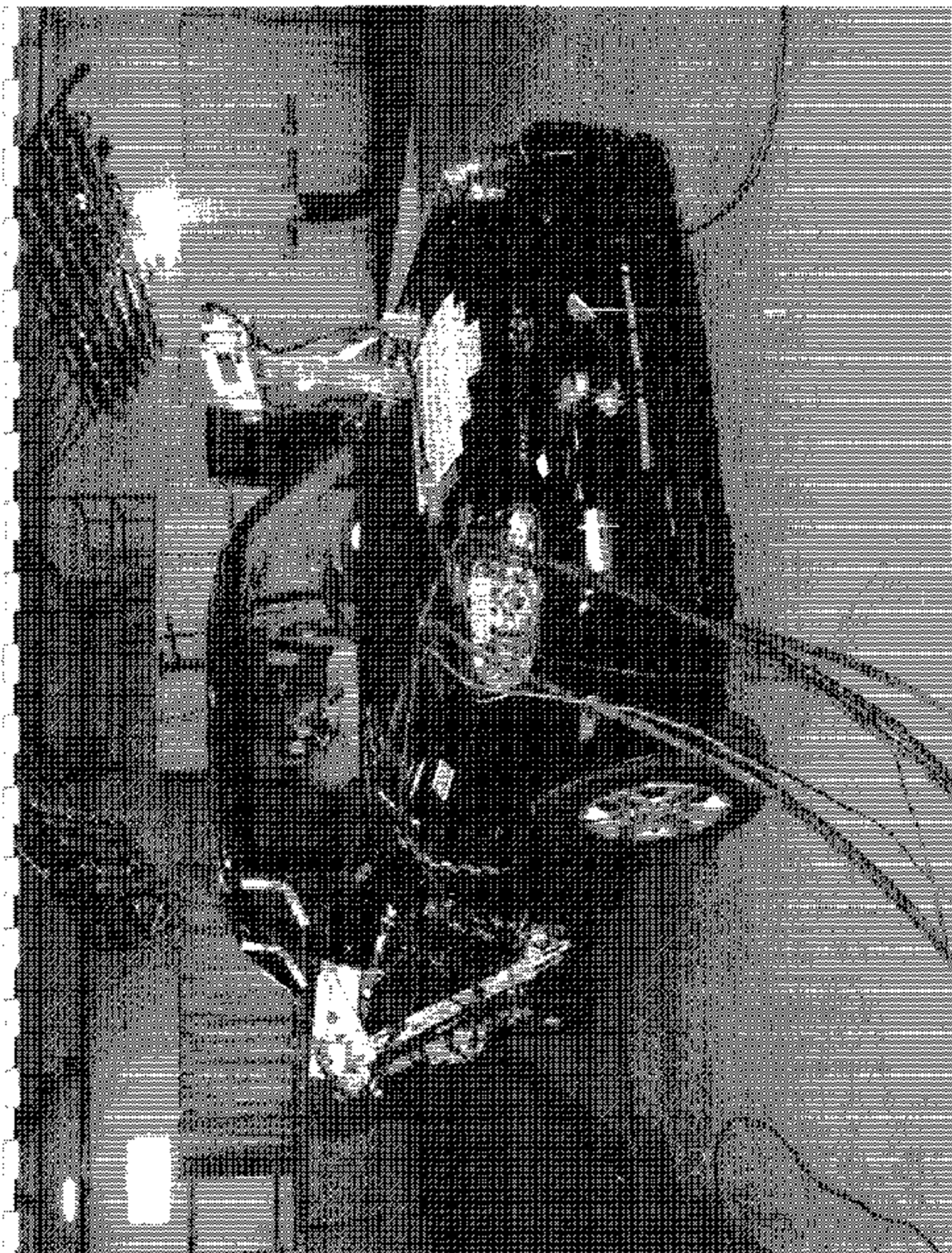


Figure A-12 POST-TEST RIGHT FRONT VIEW OF TEST VEHICLE



Figure A-12 PRE-TEST RIGHT REAR VIEW OF TEST VEHICLE



Figure A-1: Post-Test Recall of Test Questions

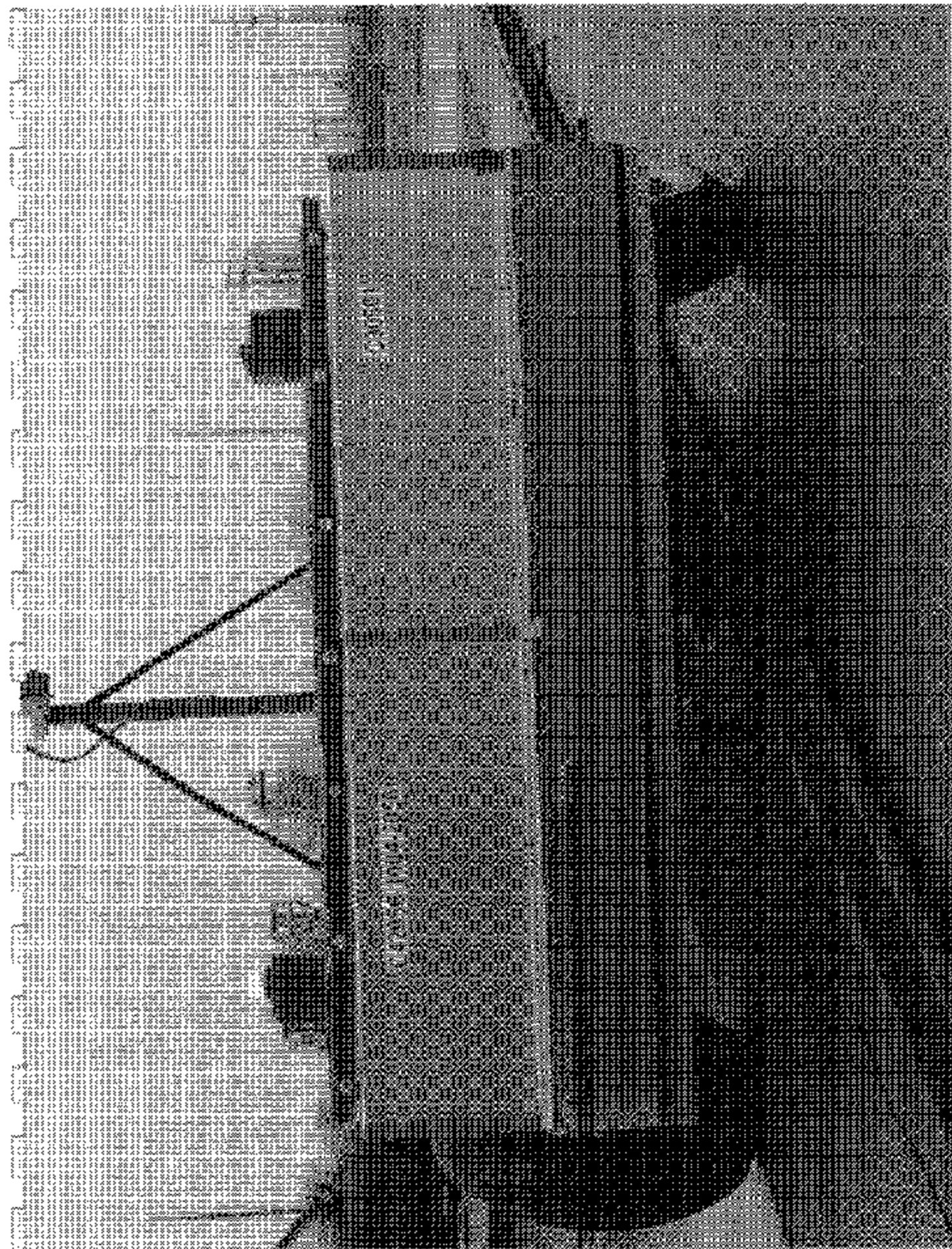


Figure A-15 PRE-TEST FRONTAL VIEW OF IMPACTOR FACE

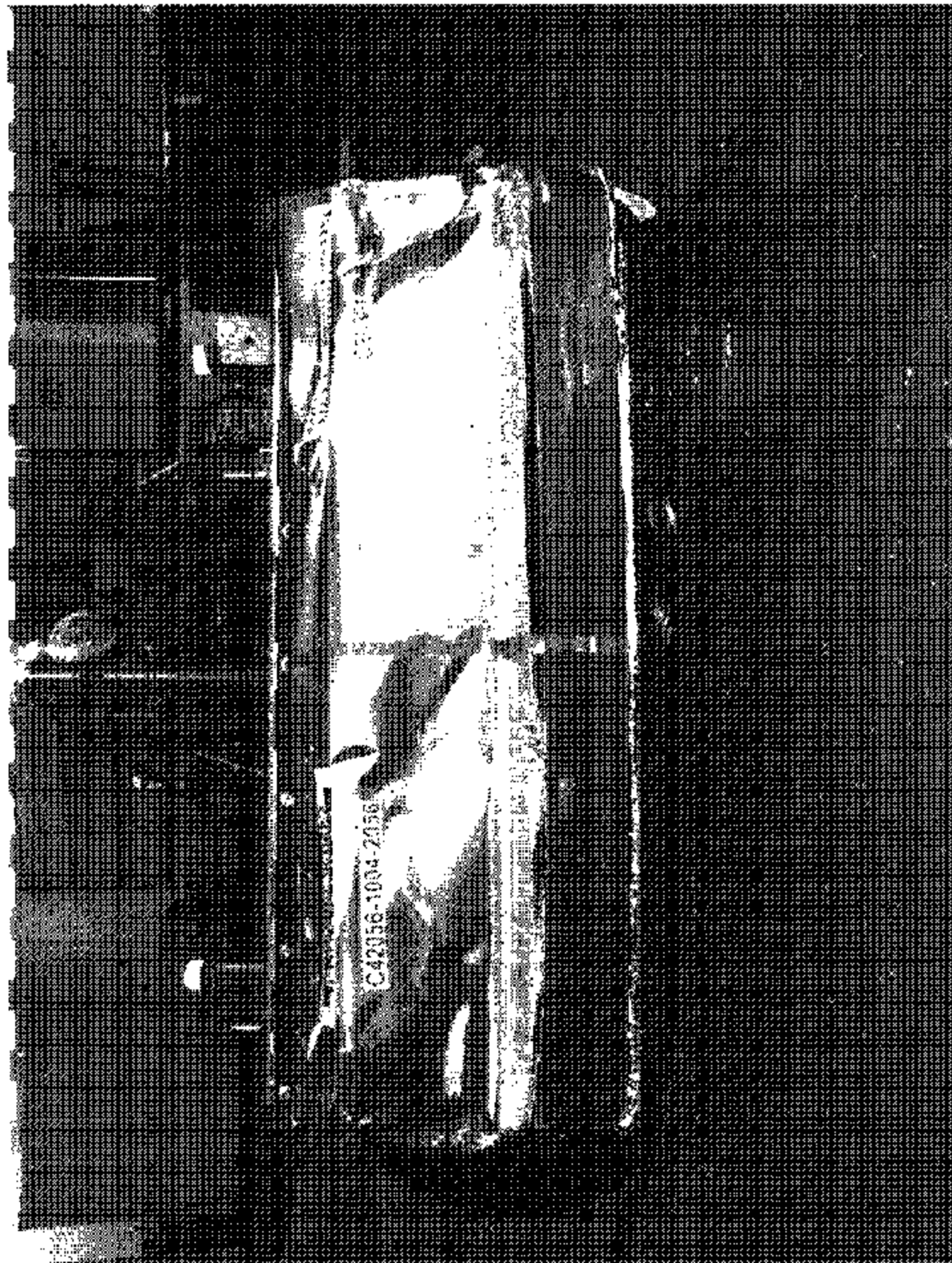


Figure A-10. Print of the item in view of the object.

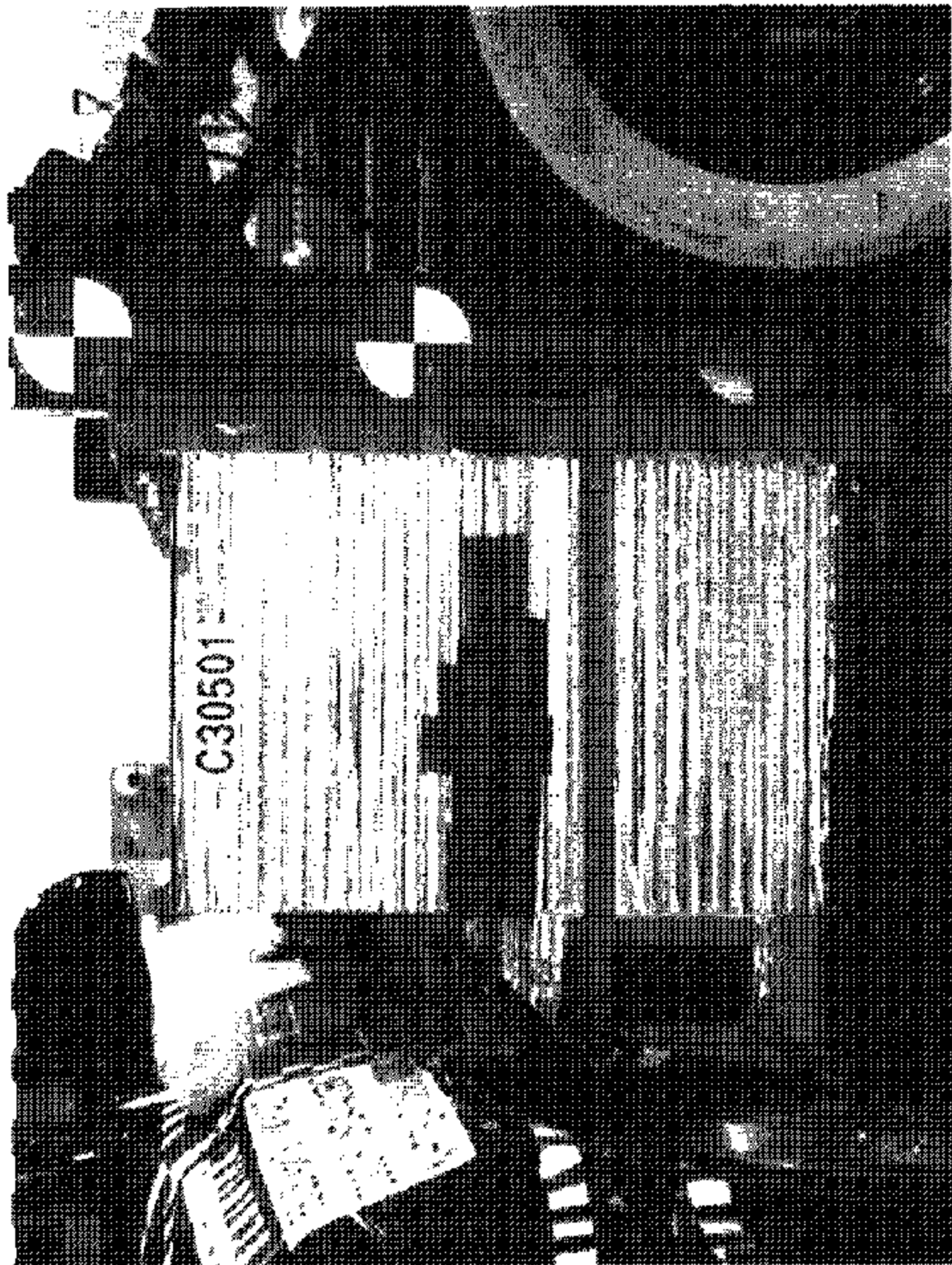


Figure A-17 PRE-POST TEST SHEET, NEW ORLEANS POLICE

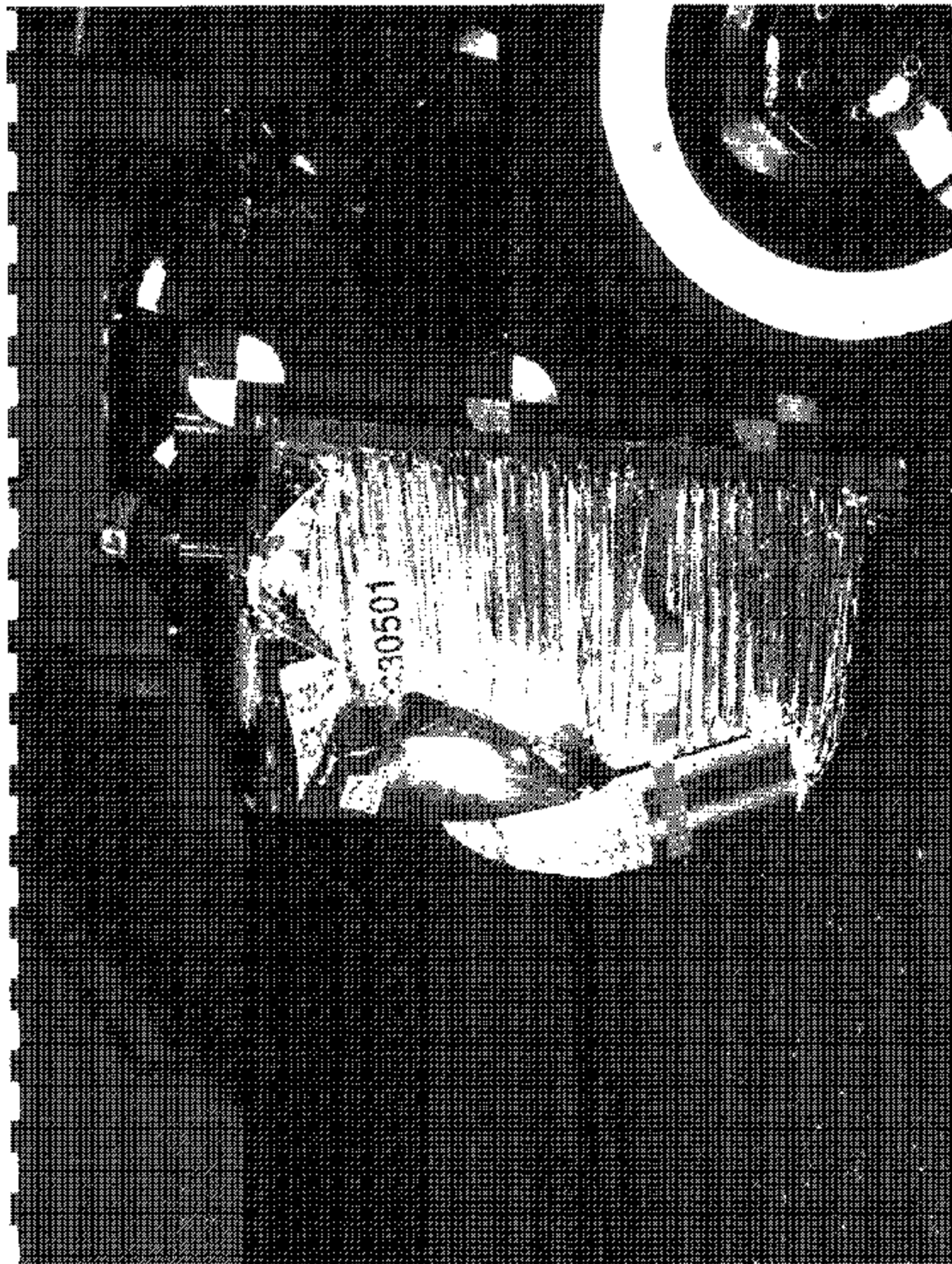


Fig. 1. A 180° TEST (1) TEST SIDE VIEW (2) IMPACT (3) (4)

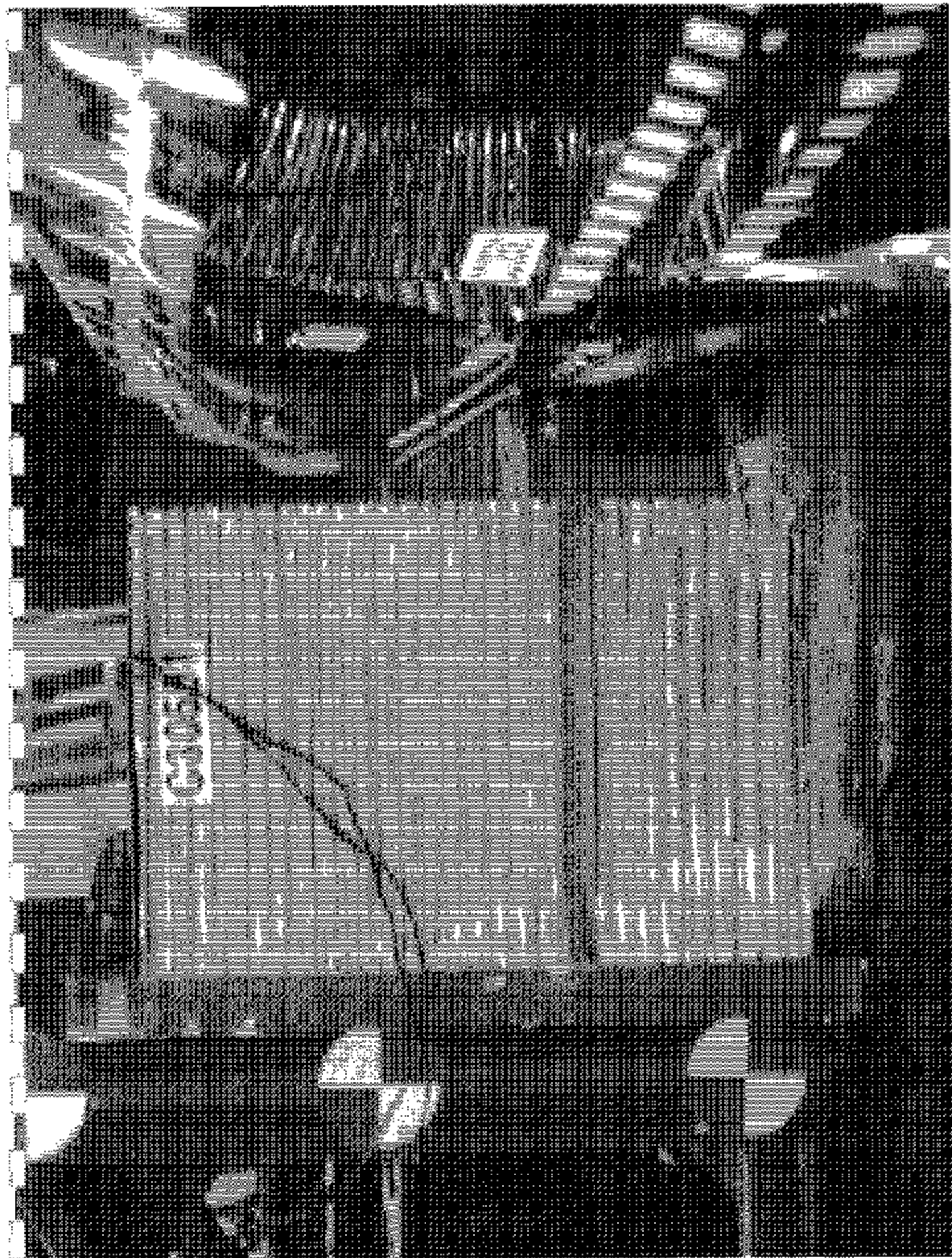


Figure A-19 PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

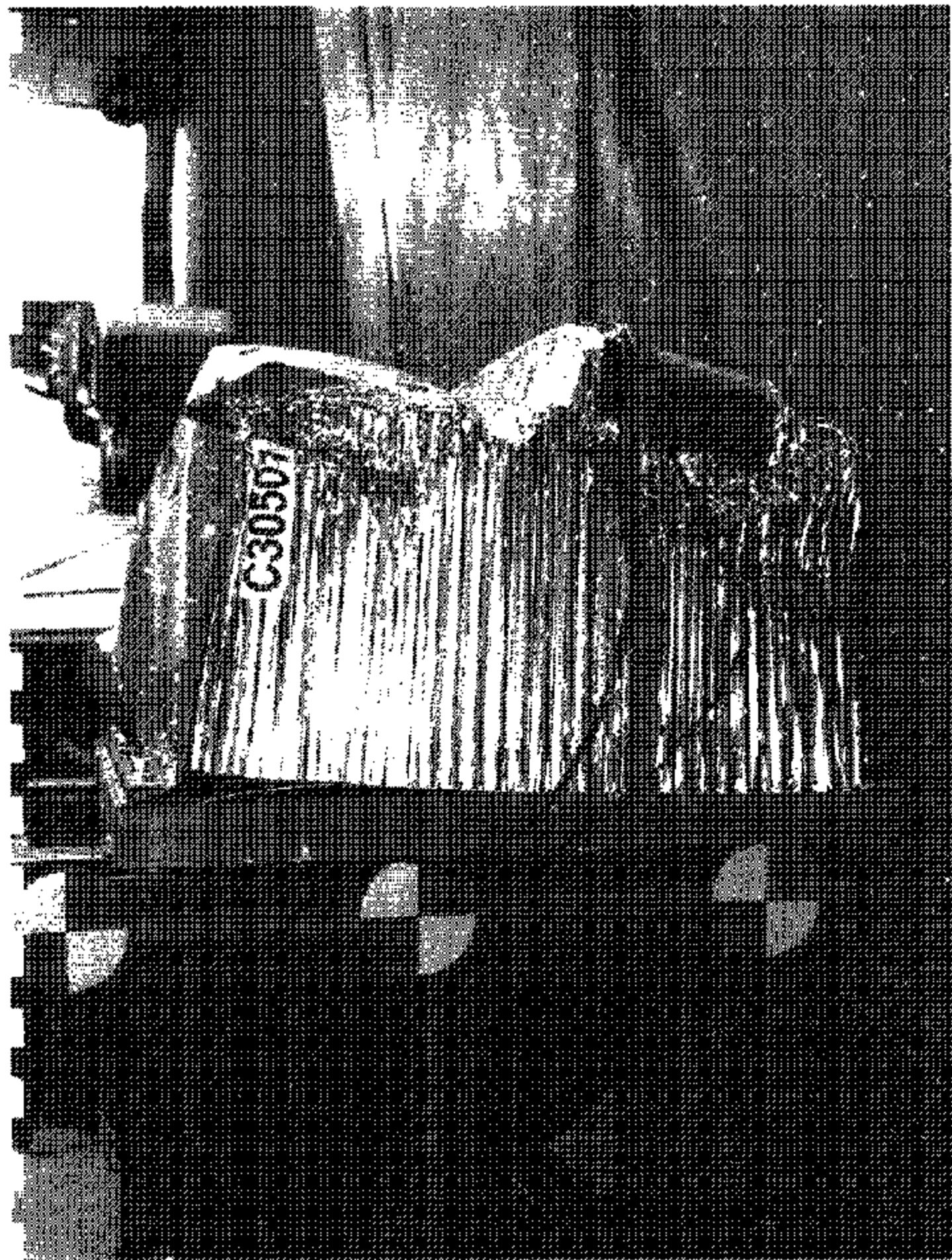


FIGURE 1. CORRUPT (LEFT) RIGHT (RIGHT) VIEW OF MECHANICAL



FIGURE A-21 PRE-TEST TOP VIEW OF IMPACTOR FACE

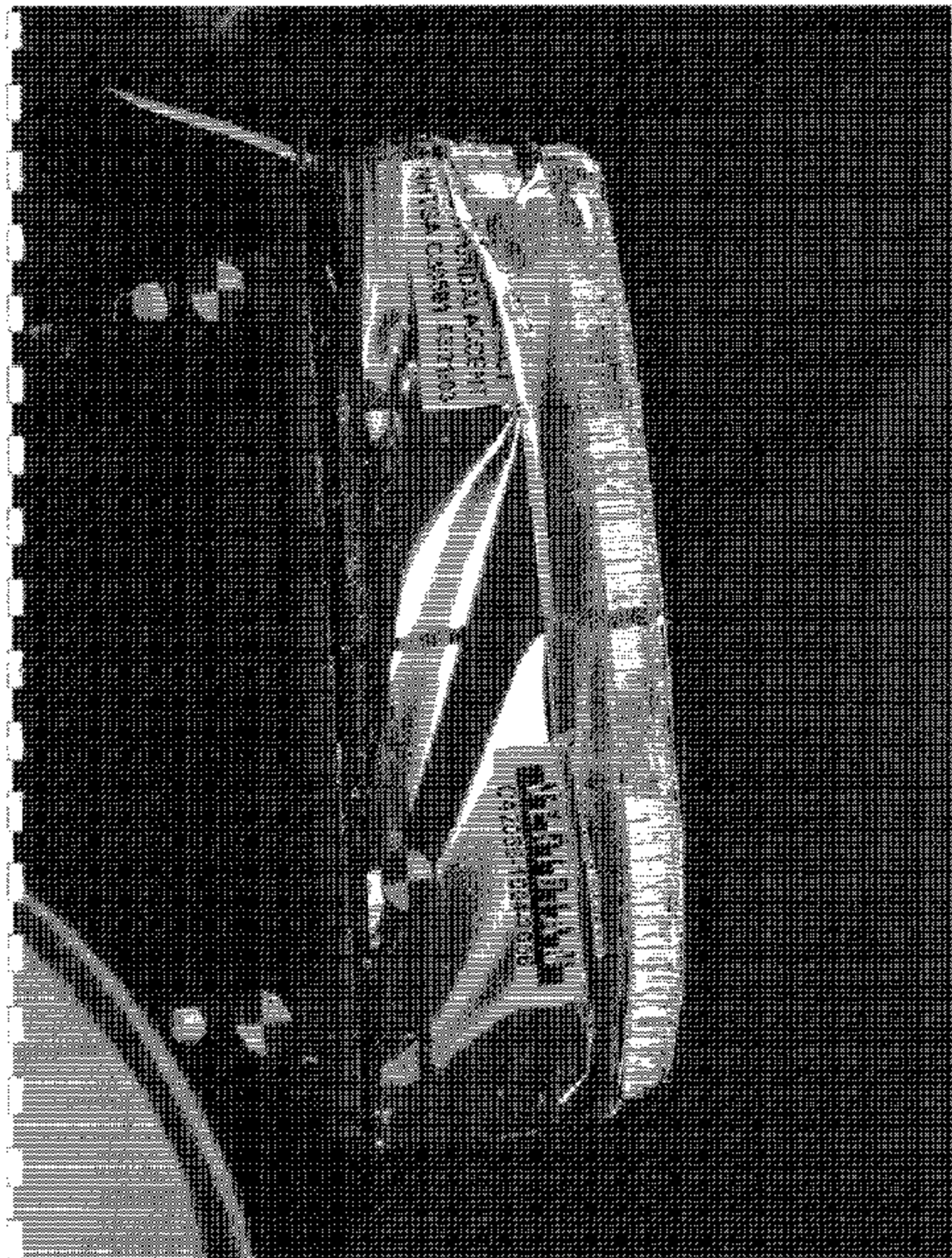


Figure A-22 POST-TEST TOP VIEW OF IMPACTOR FACE



Figure A-23 PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE

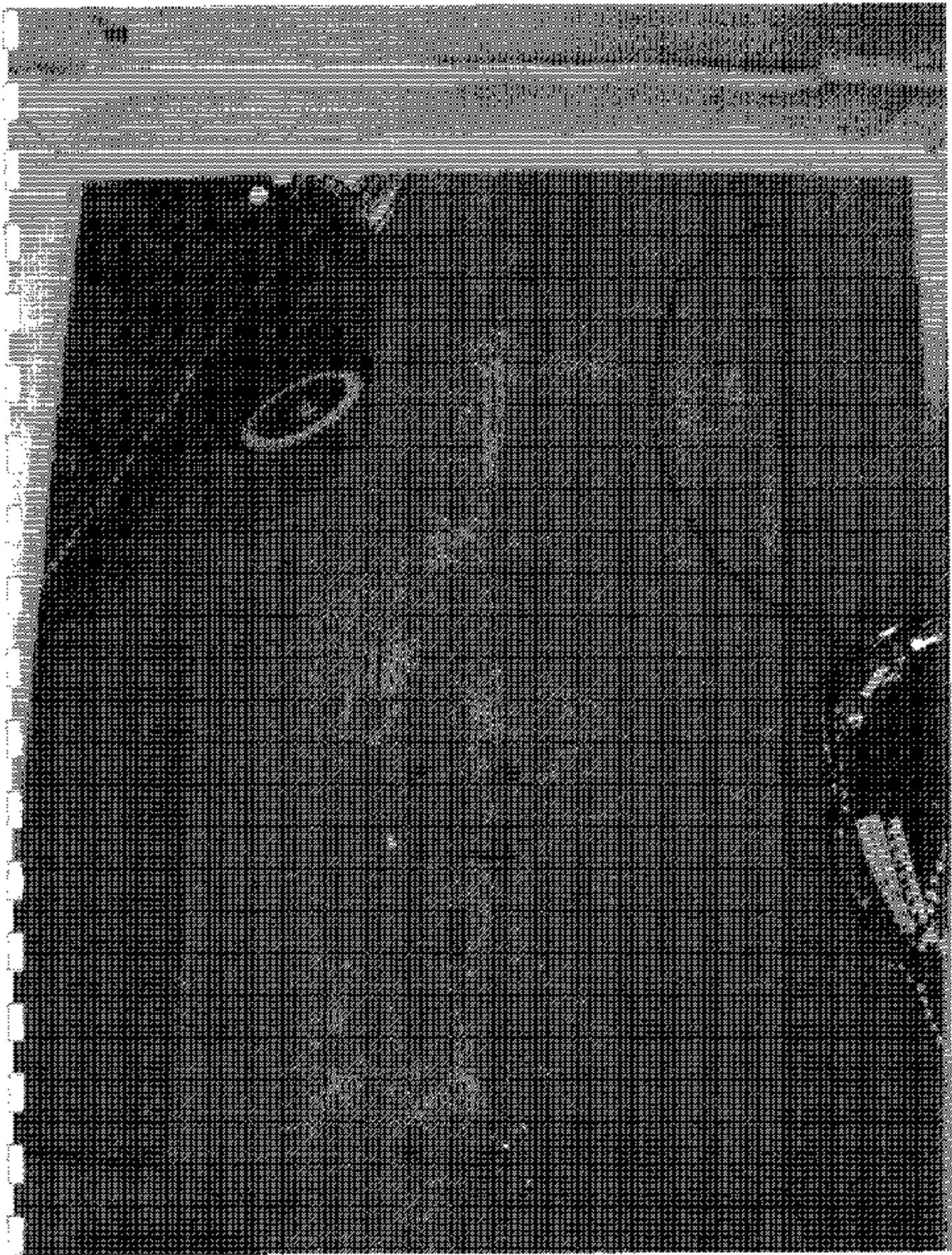


Figure A-24 POST TEST OVERHEAD VIEW OF MDB AND VEHICLE



Figure A-25 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID H1



Figure A-26 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SIDE



FIGURE A-23 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF RCLAR SID II

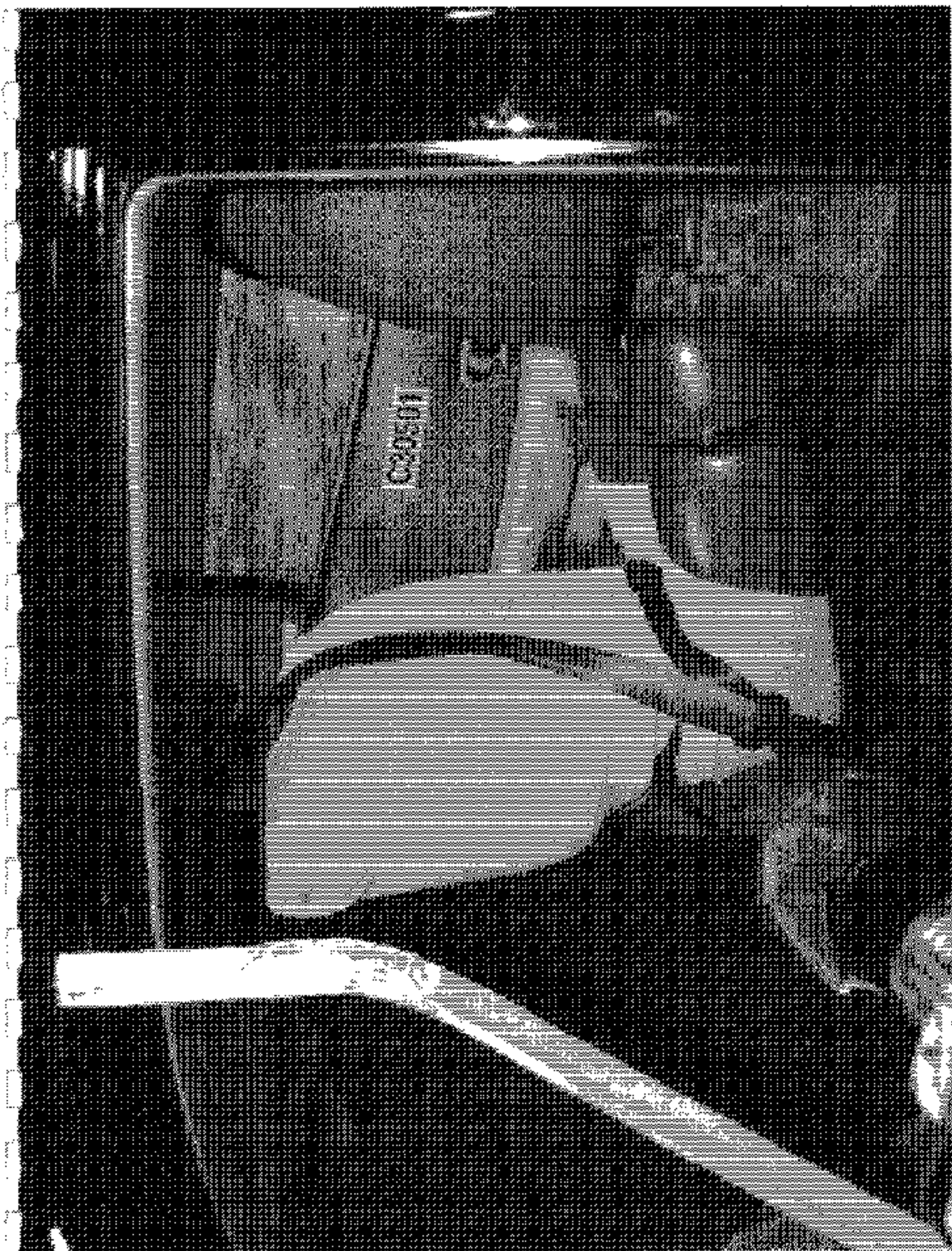


Figure A-28 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID II3



Figure A-29 PRE-TYPE LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SIDE IS

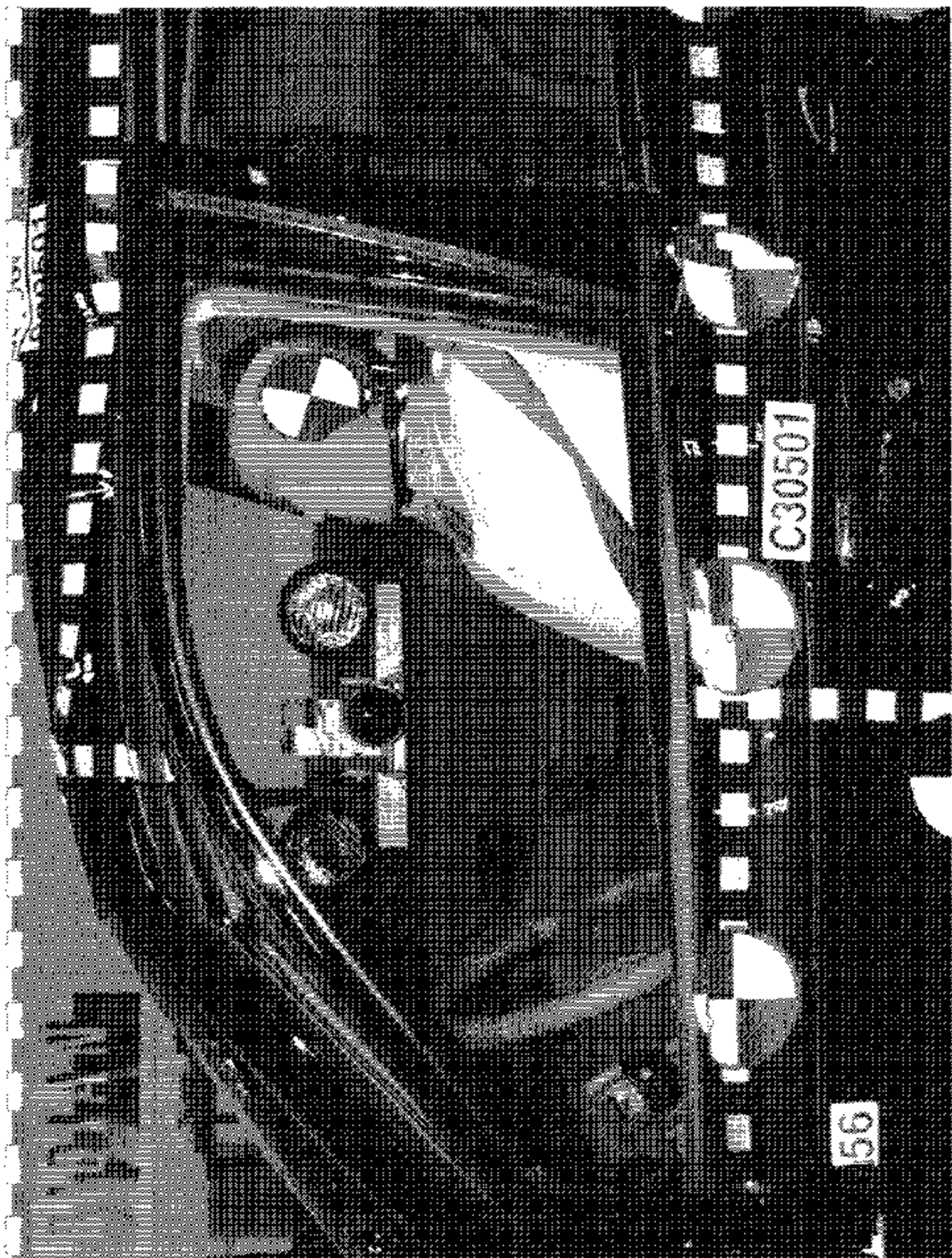


Figure A-30 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID

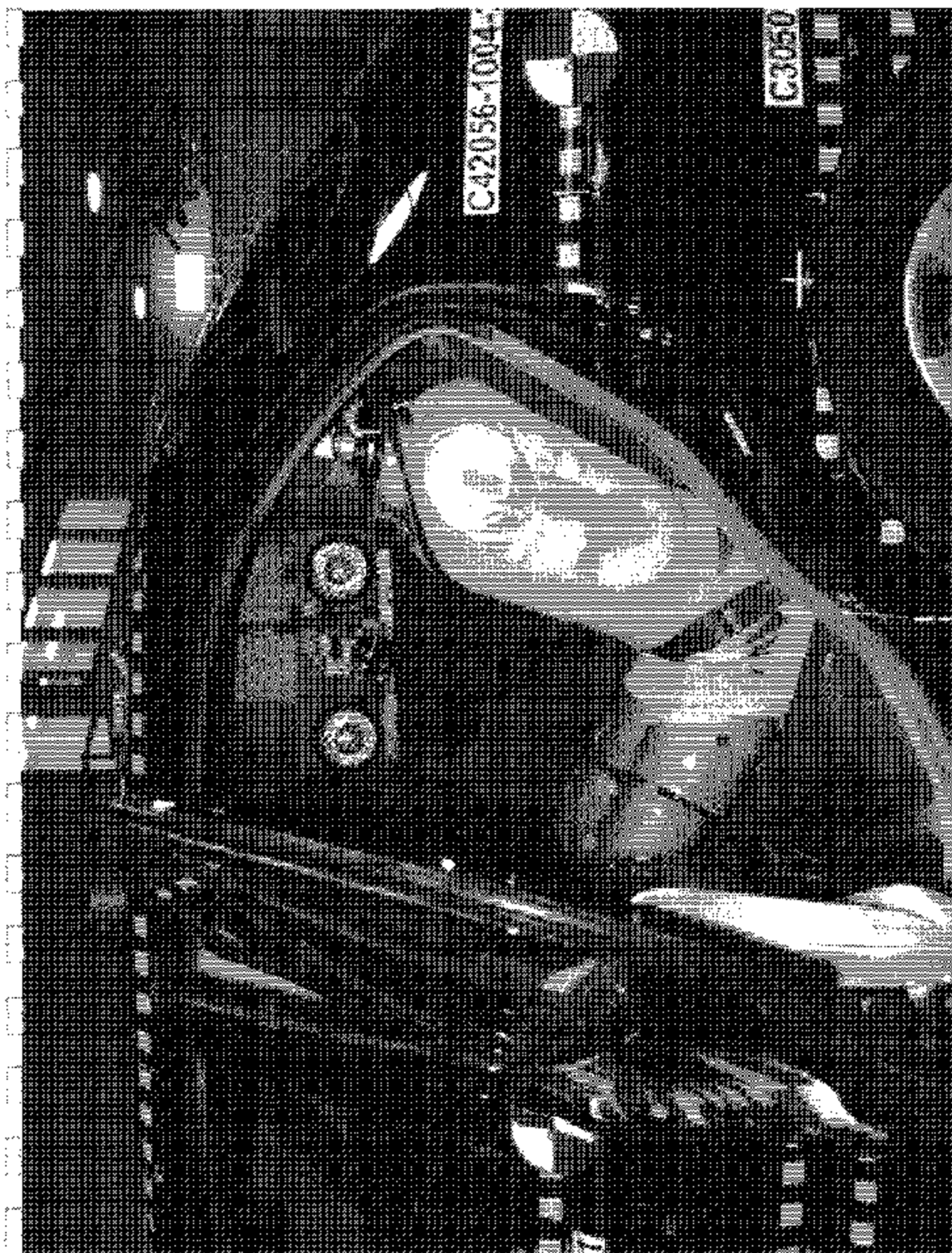


Figure A-31 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SIDE

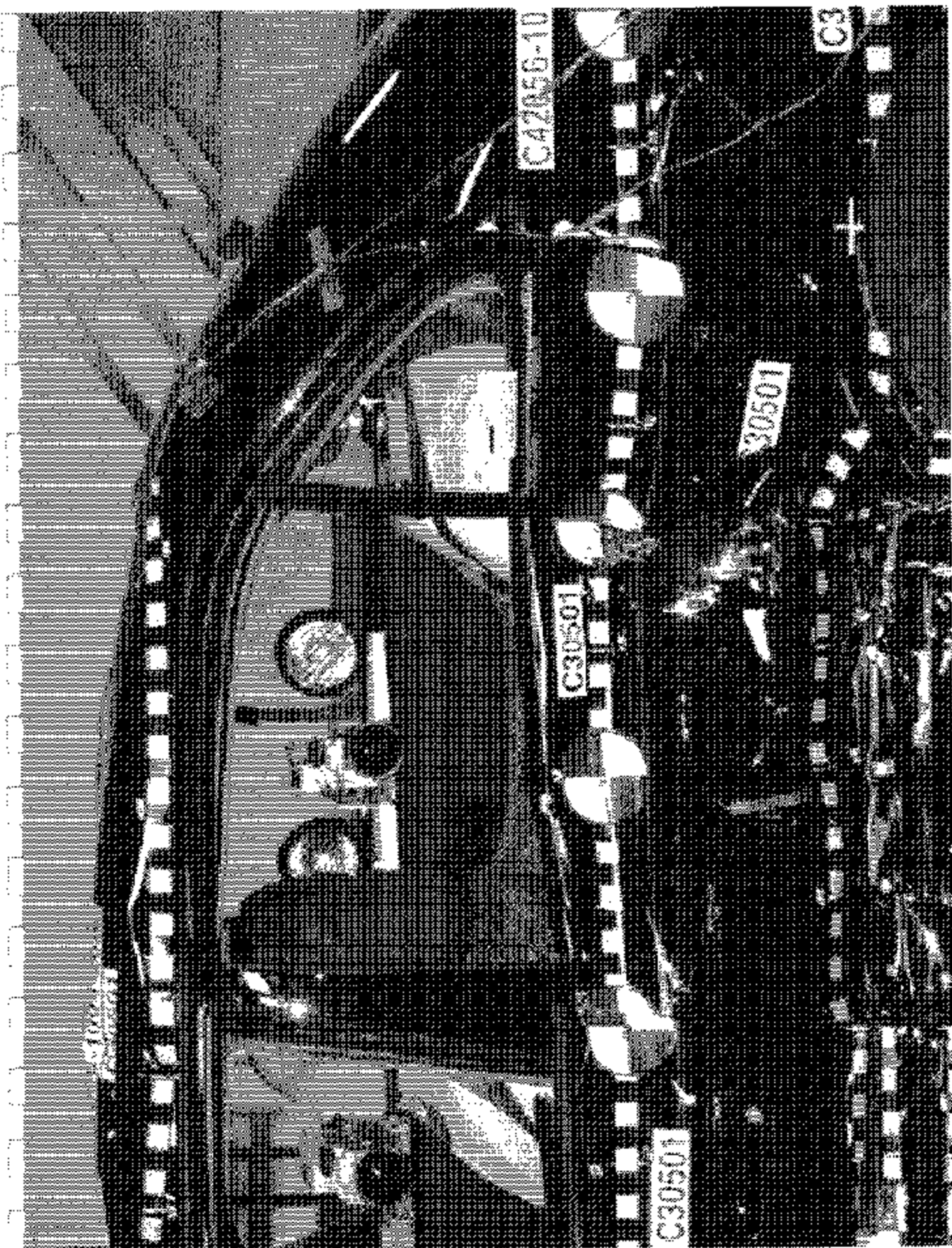


Figure A-32 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID 13

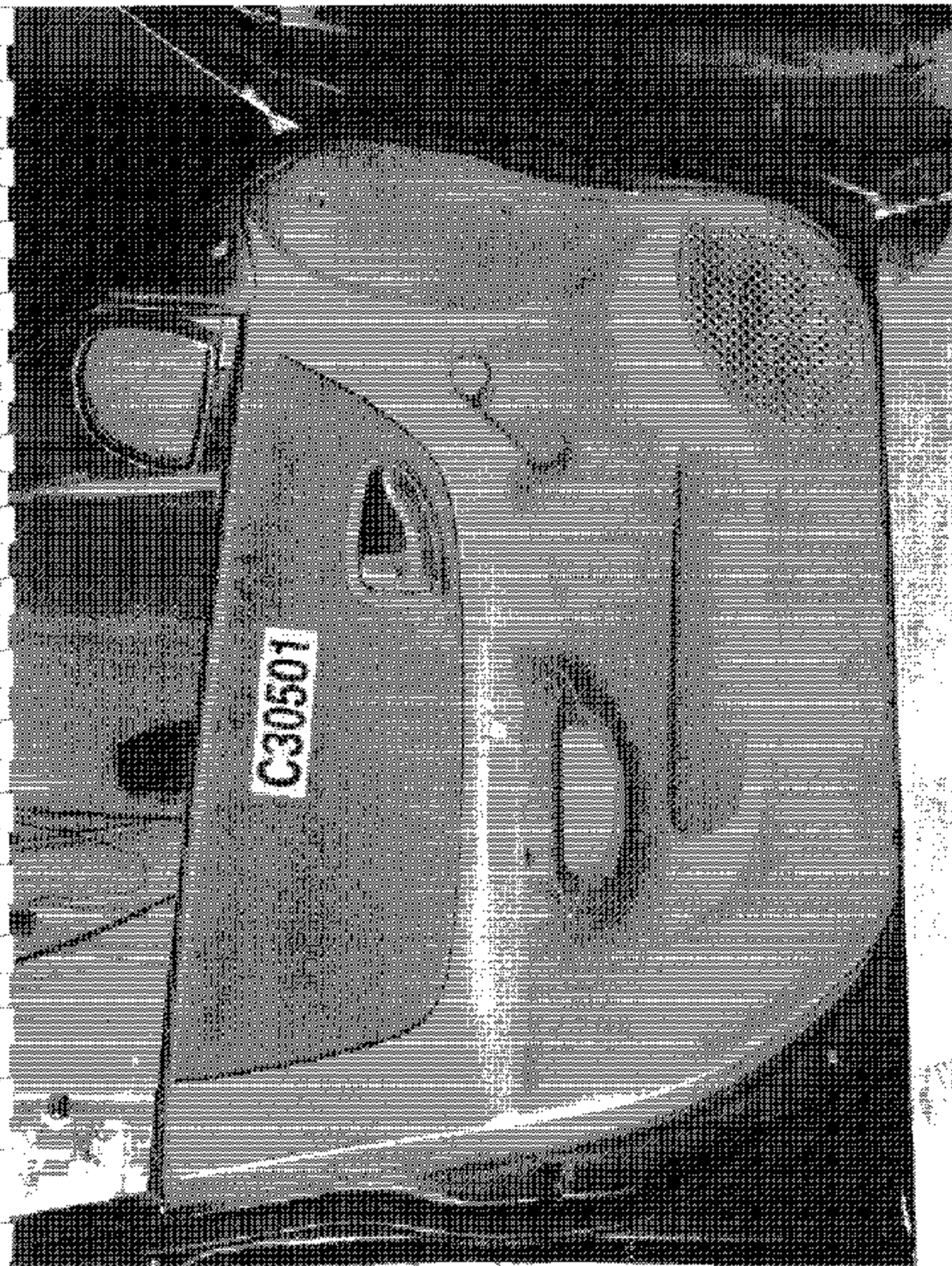


Figure A-35 PRE-TEST INTERIOR OF FRONT DOOR

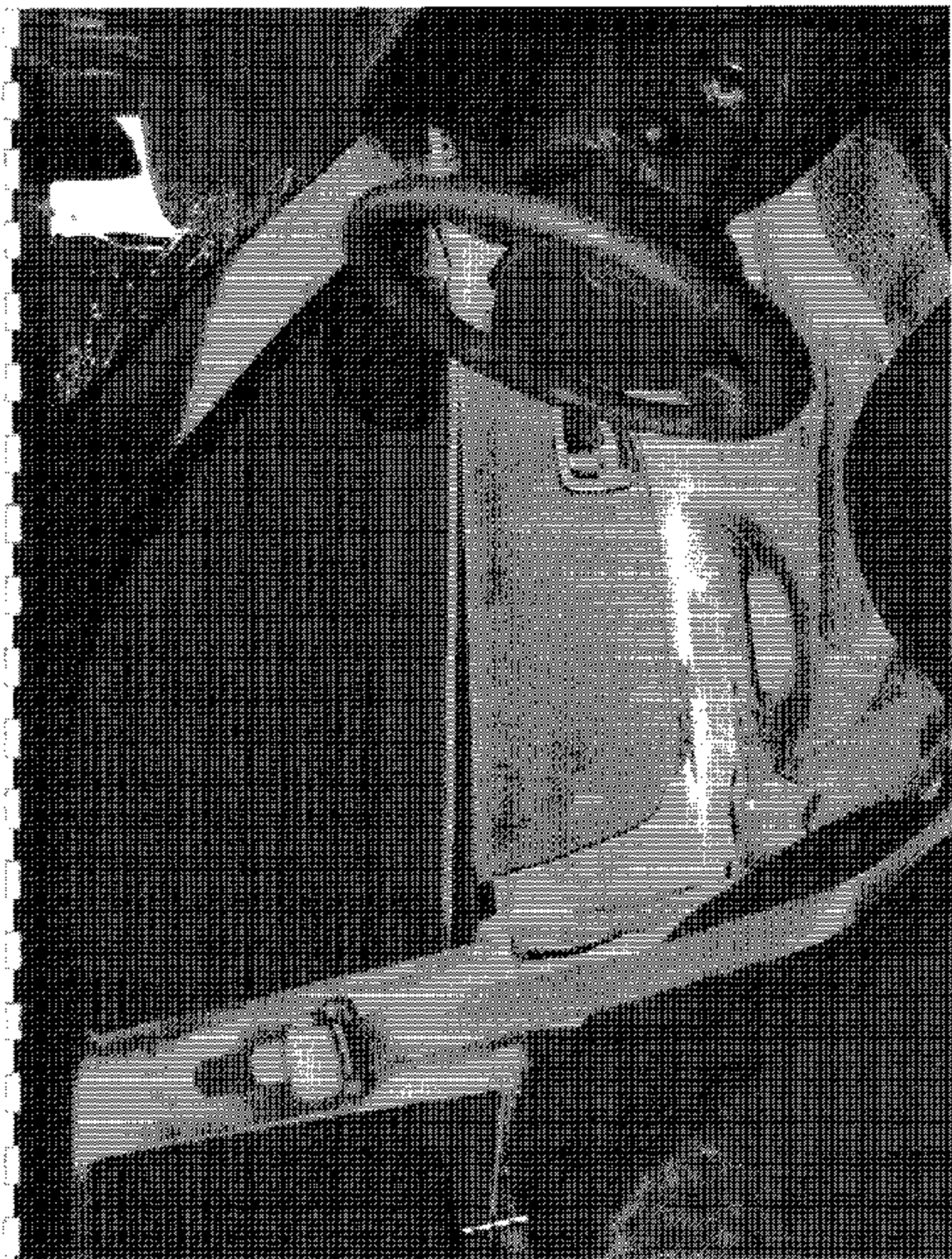


Figure A-34 POST-TEST INTERIOR OF FRONT DOOR SHOWING SIDIC IMPACT LOCATIONS



Figure A-33 PRE-TEST INTERIOR OF REAR DOOR



Figure A-36 POST-TEST INTERIOR OF REAR DOOR SHOWING SID II IMPACT LOCATIONS



Figure A-27 PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

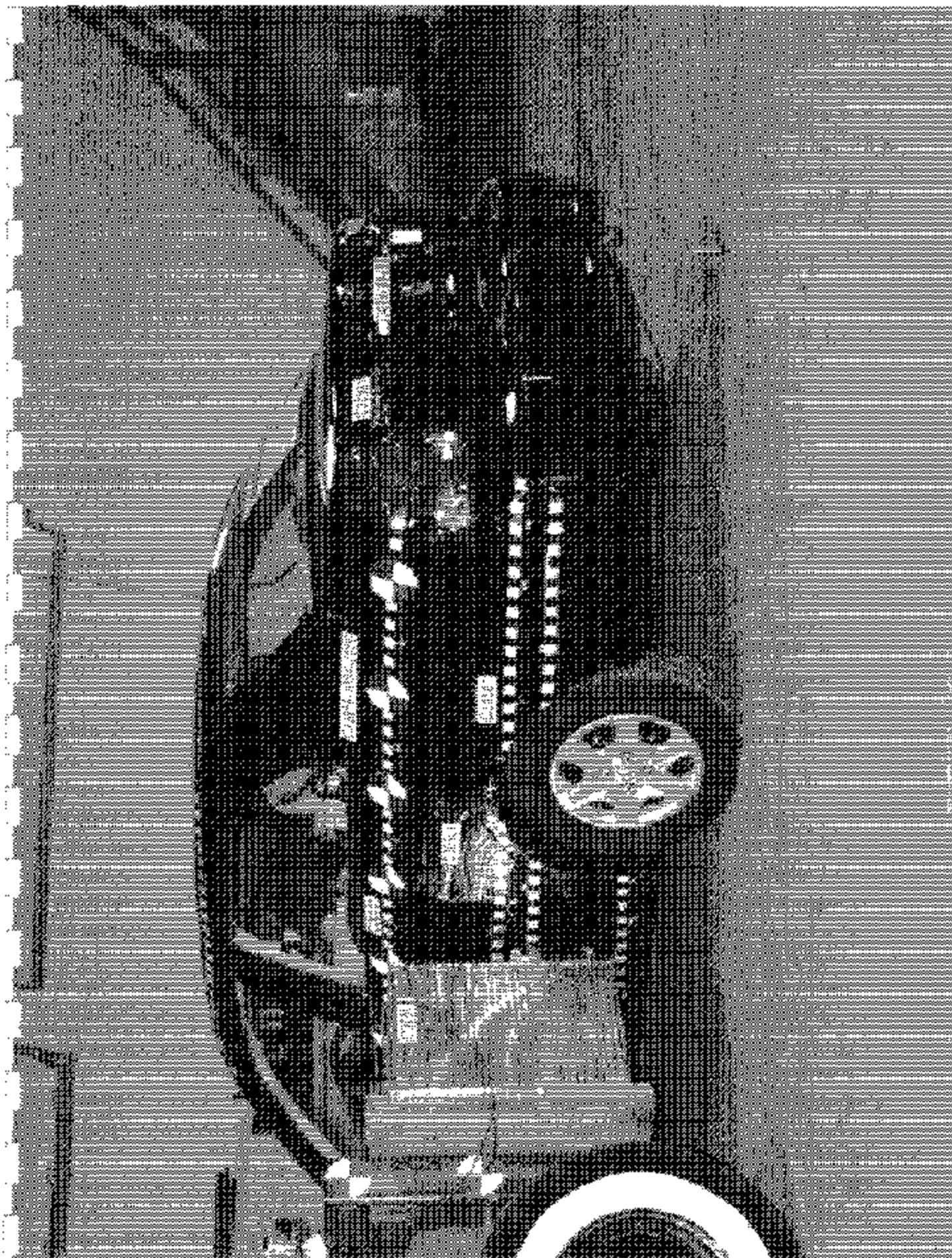


Figure A-38 PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

IMPACT

ACCENT

1 03/21/03

C30501

Figure A-39 POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET

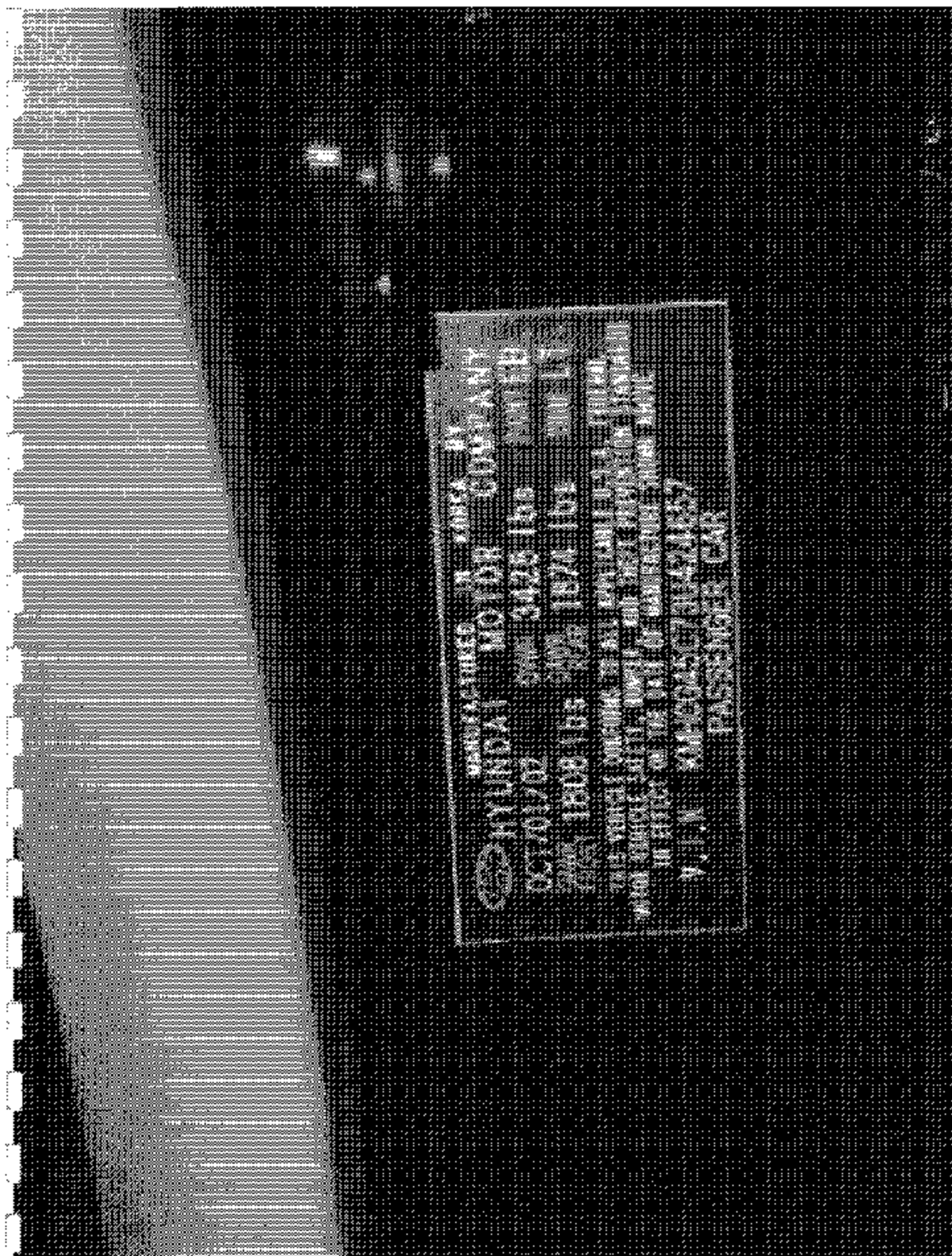


Figure A-40 CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL.

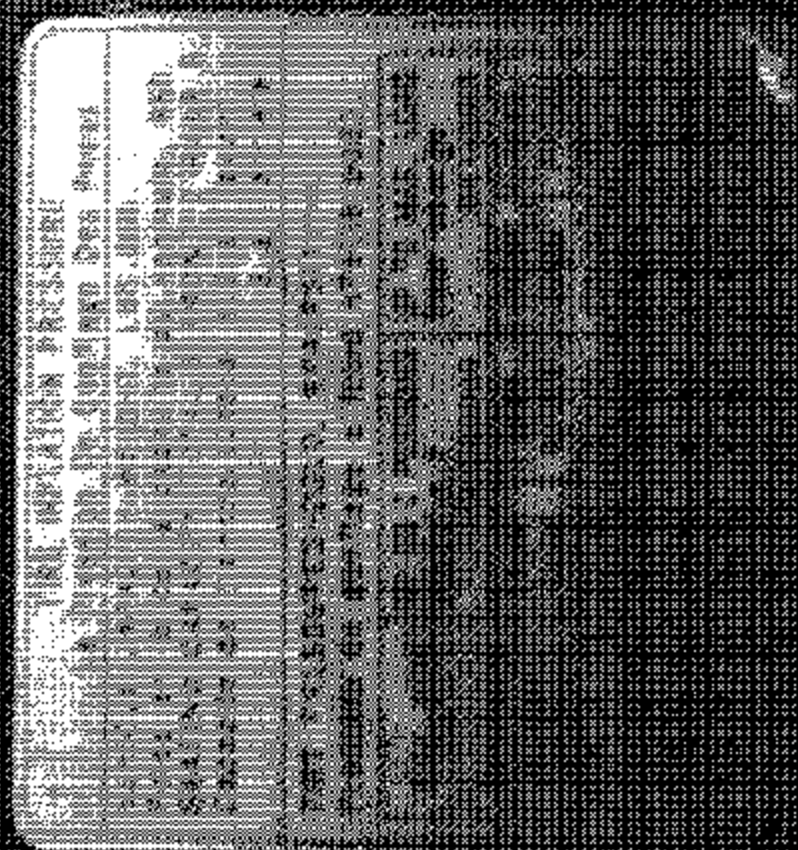


Figure A-41 CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL

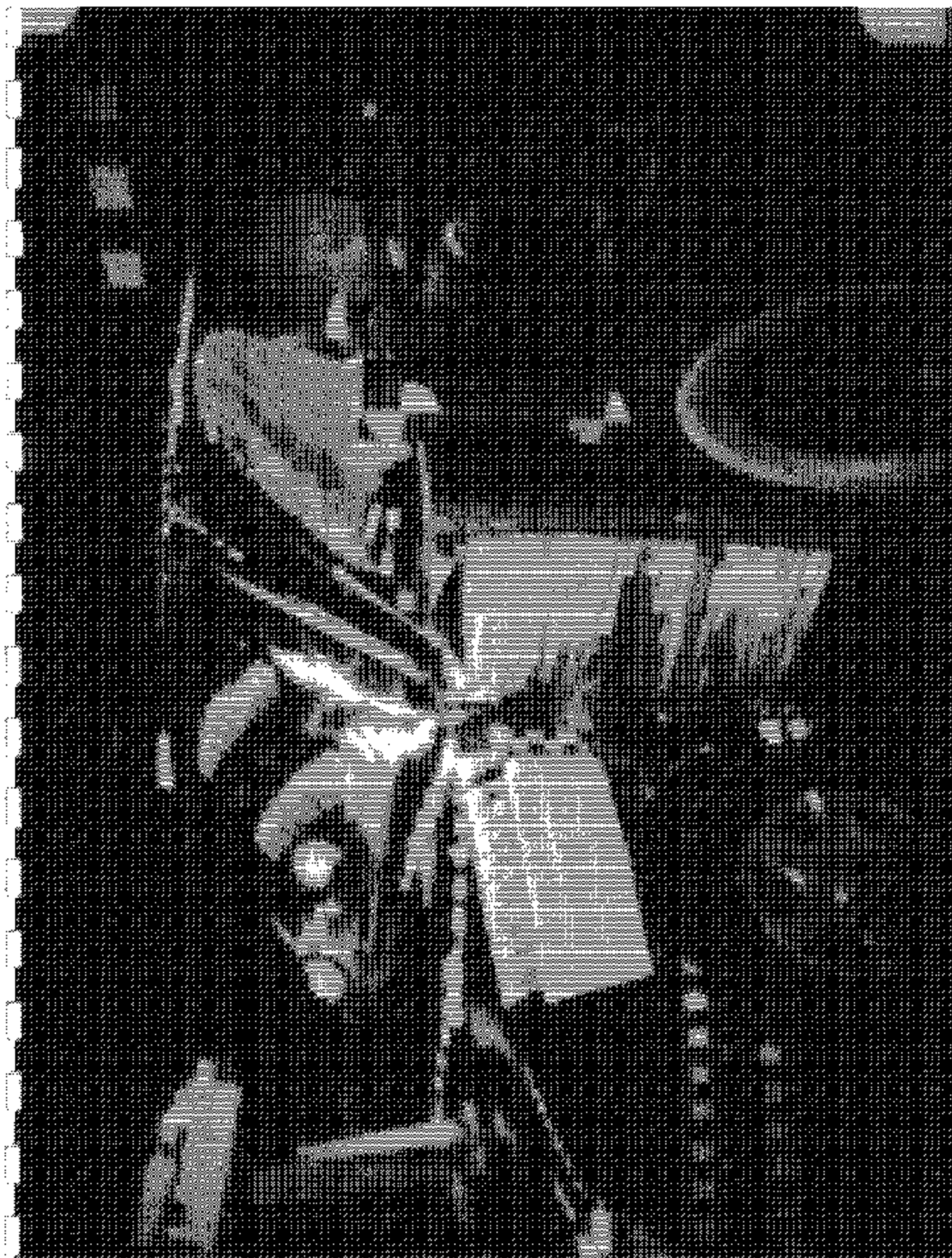


Figure A-42 IMPACT PHOTO

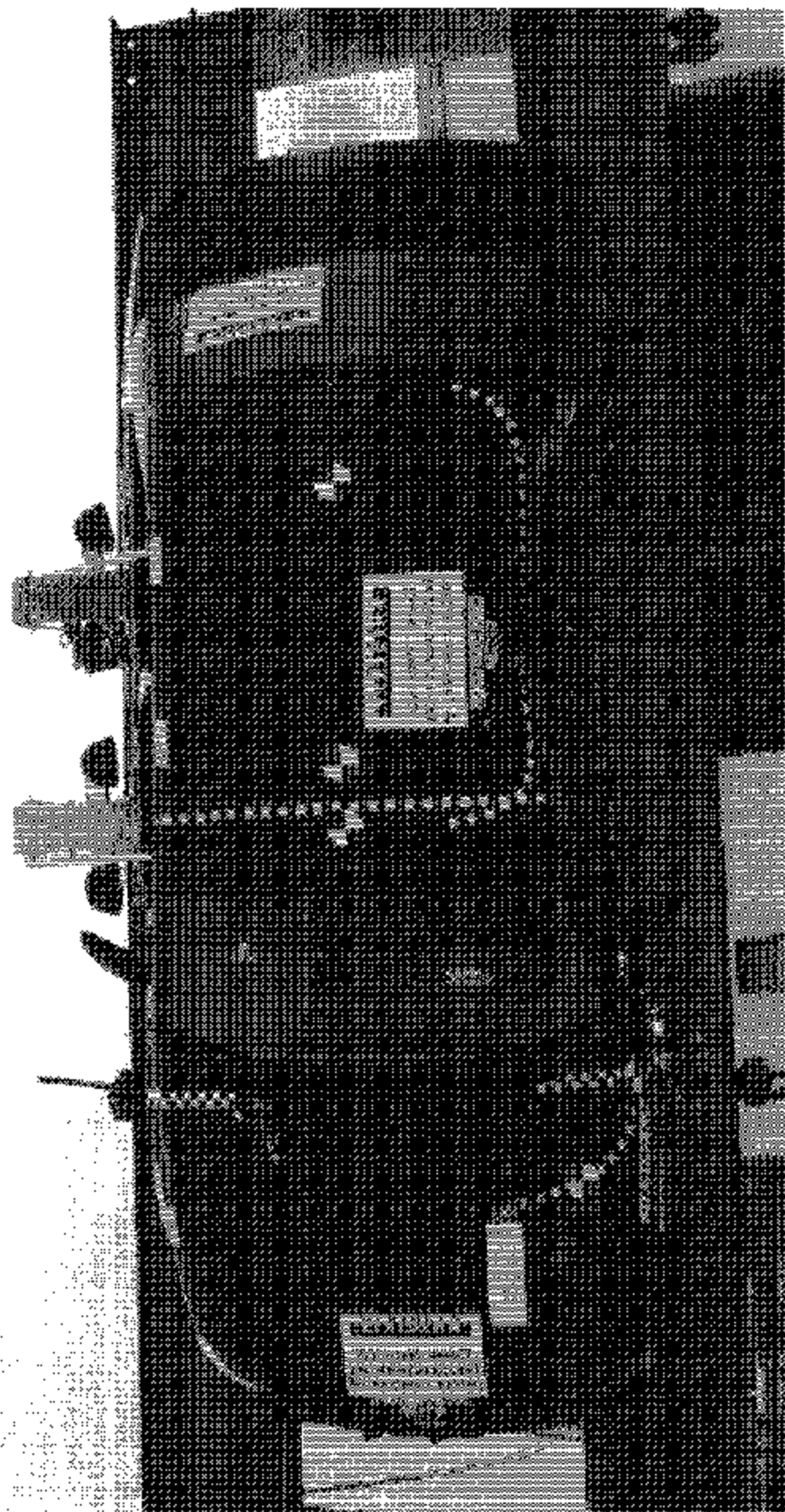


Figure A-43 ROLLOVER 90 DEGREES

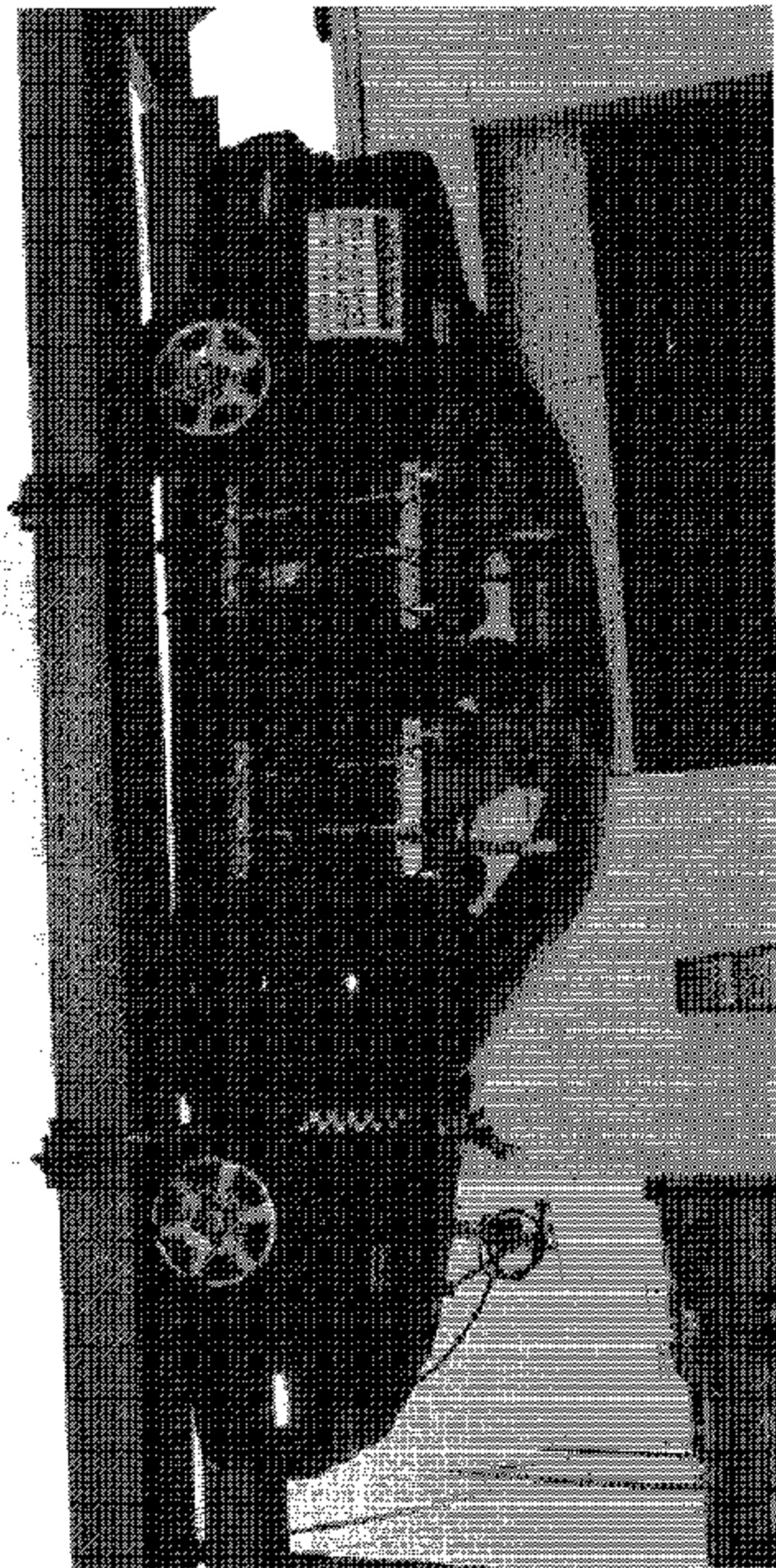


Figure A-44 ROLL OVER ISO DECELERATION

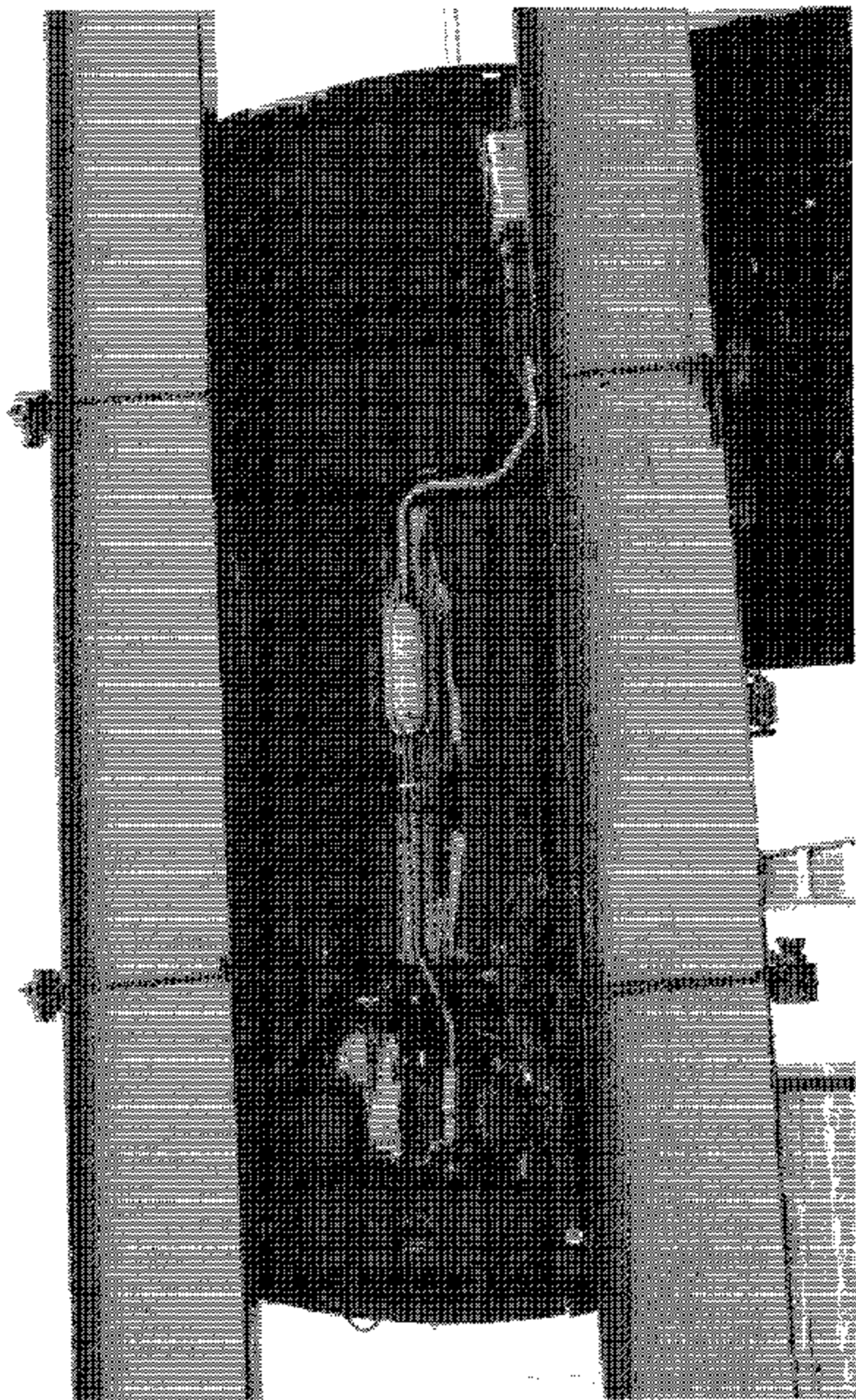


Figure A-45 ROLL OVER 270 DEGREES

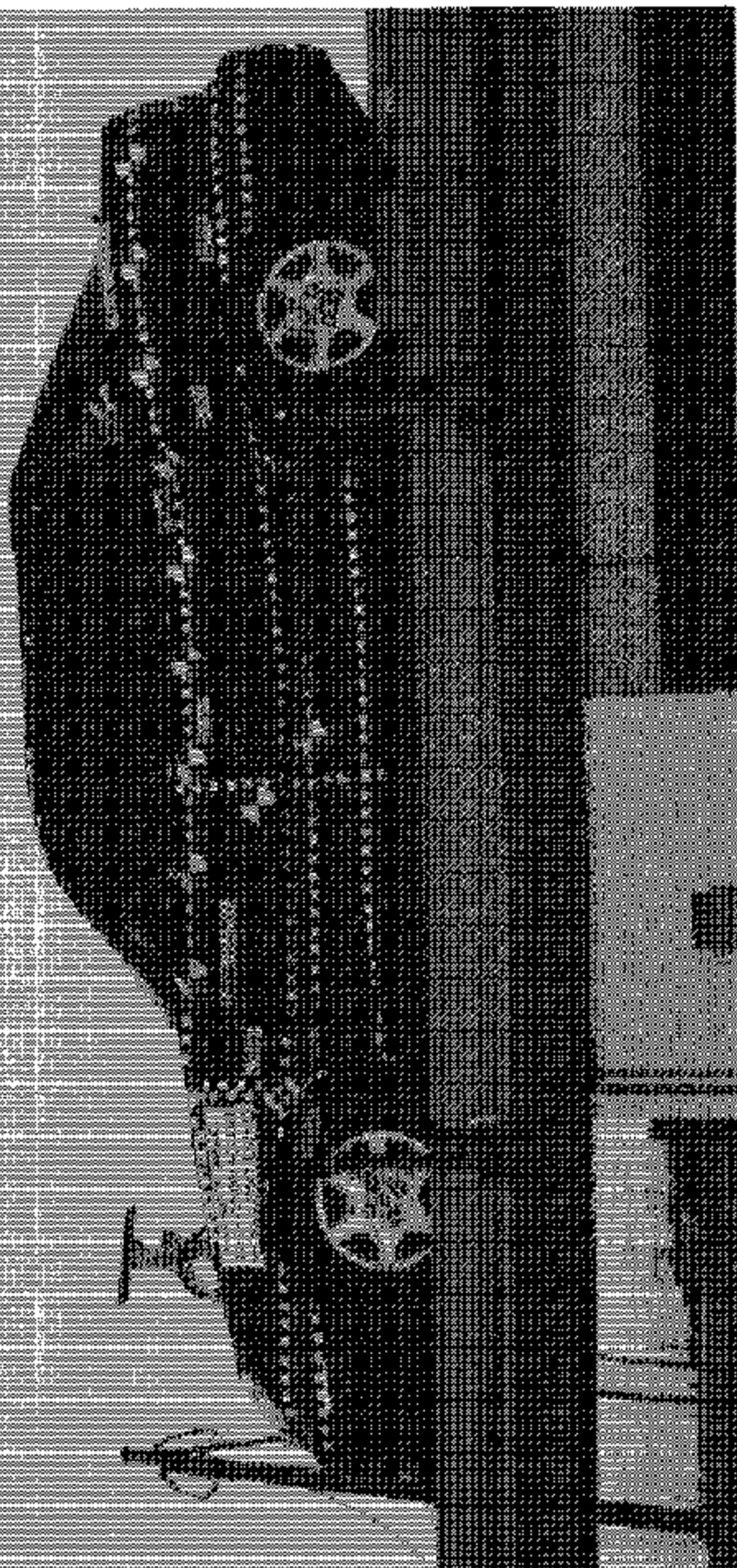


Figure A-46 ROLL DIVER 360 DEGREES

APPENDIX B

VEHICLE, MDB AND SID HYBRID III RESPONSE DATA

TABLE OF DATA PLOTS

DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS

ACCELERATION, FORCE AND MOMENT DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	DRIVER HEAD (X) ACCELERATION VS TIME	B- 6
2	DRIVER HEAD (X) VELOCITY VS TIME	B- 7
3	DRIVER HEAD (Y) ACCELERATION VS TIME	B- 8
4	DRIVER HEAD (Y) VELOCITY VS TIME	B- 9
5	DRIVER HEAD (Z) ACCELERATION VS TIME	B- 10
6	DRIVER HEAD (Z) VELOCITY VS TIME	B- 11
7	DRIVER HEAD RESULTANT ACCELERATION VS TIME	B- 12
8	DRIVER UPPER NECK (X) FORCE VS TIME	B- 13
9	DRIVER UPPER NECK (Y) FORCE VS TIME	B- 14
10	DRIVER UPPER NECK (Z) FORCE VS TIME	B- 15
11	DRIVER UPPER NECK RESULTANT FORCE VS TIME	B- 16
12	DRIVER UPPER NECK (X) MOMENT VS TIME	B- 17
13	DRIVER UPPER NECK (Y) MOMENT VS TIME	B- 18
14	DRIVER UPPER NECK (Z) MOMENT VS TIME	B- 19
15	DRIVER UPPER NECK RESULTANT MOMENT VS TIME	B- 20
16	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 21
17	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 22
18	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 23
19	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 24
20	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 25
21	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 26
22	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 27
23	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 28
24	PASSENGER HEAD (X) ACCELERATION VS TIME	B- 29
25	PASSENGER HEAD (X) VELOCITY VS TIME	B- 30
26	PASSENGER HEAD (Y) ACCELERATION VS TIME	B- 31
27	PASSENGER HEAD (Y) VELOCITY VS TIME	B- 32
28	PASSENGER HEAD (Z) ACCELERATION VS TIME	B- 33
29	PASSENGER HEAD (Z) VELOCITY VS TIME	B- 34
30	PASSENGER HEAD RESULTANT ACCELERATION VS TIME	B- 35
31	DRIVER UPPER NECK (X) FORCE VS TIME	B- 36
32	DRIVER UPPER NECK (Y) FORCE VS TIME	B- 37
33	DRIVER UPPER NECK (Z) FORCE VS TIME	B- 38
34	DRIVER UPPER NECK RESULTANT FORCE VS TIME	B- 39
35	DRIVER UPPER NECK (X) MOMENT VS TIME	B- 40
36	DRIVER UPPER NECK (Y) MOMENT VS TIME	B- 41
37	DRIVER UPPER NECK (Z) MOMENT VS TIME	B- 42
38	DRIVER UPPER NECK RESULTANT MOMENT VS TIME	B- 43
39	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 44
40	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 45
41	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 46
42	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 47
43	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 48
44	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 49
45	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 50
46	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 51

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS

ACCELERATION DATA - FIR FILTERED

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
47	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 52
48	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 53
49	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 54
50	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 55
51	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 56
52	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 57
53	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 58
54	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 59

TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
55	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME	B- 60
56	RIGHT SIDE SILL AT FRONT SEAT (X) VELOCITY VS TIME	B- 61
57	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 62
58	RIGHT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 63
59	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME	B- 64
60	RIGHT SIDE SILL AT FRONT SEAT (Z) VELOCITY VS TIME	B- 65
61	RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION VS TIME	B- 66
62	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME	B- 67
63	RIGHT SIDE SILL AT REAR SEAT (X) VELOCITY VS TIME	B- 68
64	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 69
65	RIGHT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 70
66	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME	B- 71
67	RIGHT SIDE SILL AT REAR SEAT (Z) VELOCITY VS TIME	B- 72
68	RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION VS TIME	B- 73
69	REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME	B- 74
70	REAR FLOORPAN ABOVE AXLE (X) VELOCITY VS TIME	B- 75
71	REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME	B- 76
72	REAR FLOORPAN ABOVE AXLE (Y) VELOCITY VS TIME	B- 77
73	REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME	B- 78
74	REAR FLOORPAN ABOVE AXLE (Z) VELOCITY VS TIME	B- 79
75	REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION VS TIME	B- 80
76	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 81
77	LEFT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 82
78	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 83
79	LEFT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 84
80	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME	B- 85
81	RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME	B- 86
82	LOWER B-POST (Y) ACCELERATION VS TIME	B- 87
83	LOWER B-POST (Y) VELOCITY VS TIME	B- 88
84	UPPER B-POST (Y) ACCELERATION VS TIME	B- 89
85	UPPER B-POST (Y) VELOCITY VS TIME	B- 90
86	LOWER A-POST (Y) ACCELERATION VS TIME	B- 91
87	LOWER A-POST (Y) VELOCITY VS TIME	B- 92
88	UPPER A-POST (Y) ACCELERATION VS TIME	B- 93
89	UPPER A-POST (Y) VELOCITY VS TIME	B- 94
90	FRONT SEAT TRACK (Y) ACCELERATION VS TIME	B- 95
91	FRONT SEAT TRACK (Y) VELOCITY VS TIME	B- 96
92	REAR SEAT TRACK (Y) ACCELERATION VS TIME	B- 97
93	REAR SEAT TRACK (Y) VELOCITY VS TIME	B- 98

TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
94	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 99
95	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 100
96	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 101
97	VEHICLE CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 102
98	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 103
99	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 104
100	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 105

MDB INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
101	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 106
102	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 107
103	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 108
104	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 109
105	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 110
106	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 111
107	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 112
108	MDB REAR (X) ACCELERATION VS TIME	B- 113
109	MDB REAR (X) VELOCITY VS TIME	B- 114
110	MDB REAR (Y) ACCELERATION VS TIME	B- 115
111	MDB REAR (Y) VELOCITY VS TIME	B- 116

**DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
INTEGRATION DATA - FILTER CLASS 180**

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
112	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 117
113	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 118
114	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 119
115	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 120
116	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 121
117	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 122
118	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 123
119	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 124
120	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 125
121	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 126
122	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 127
123	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 128
124	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 129
125	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 130
126	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 131
127	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 132

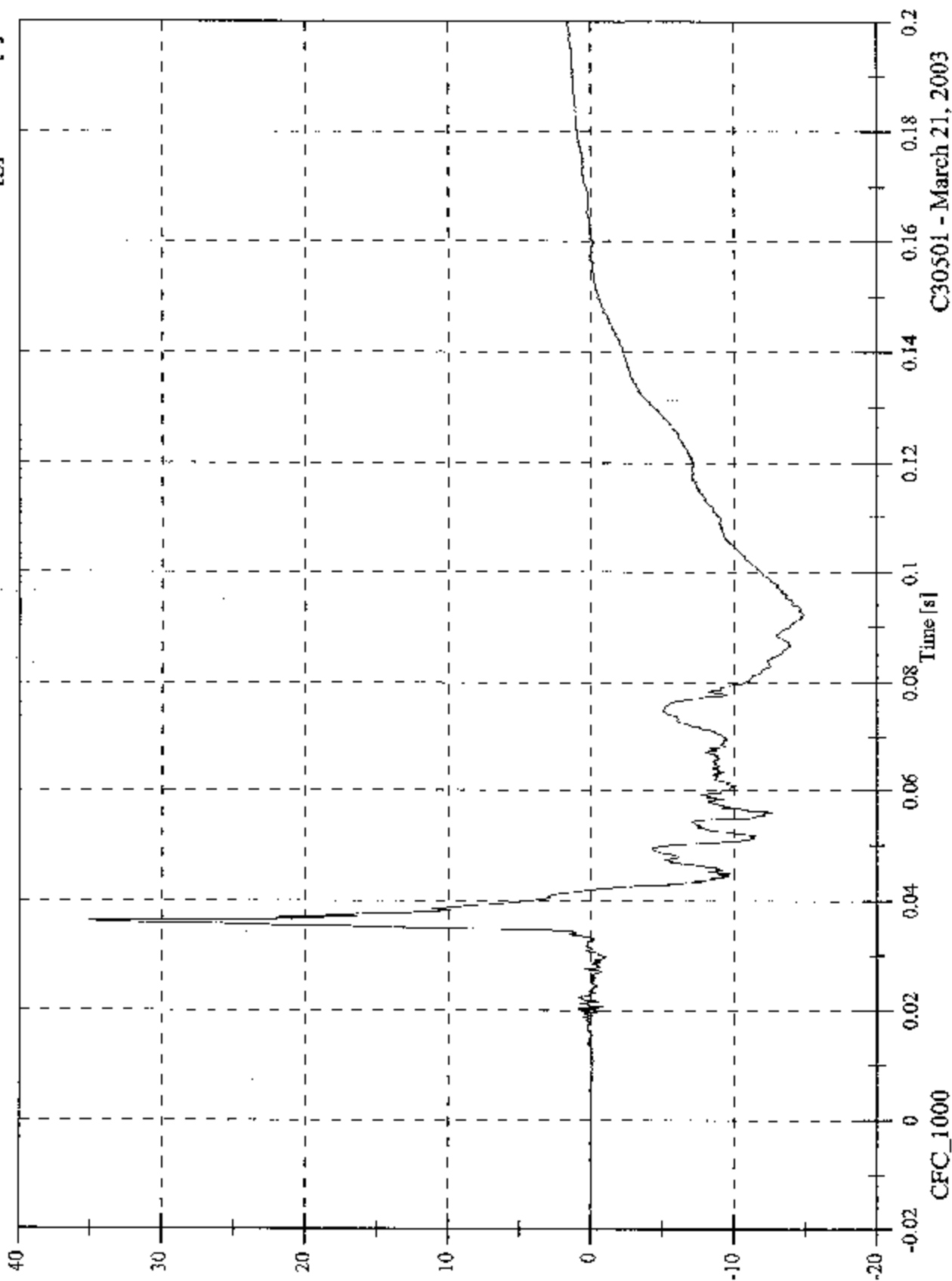
**DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FIR FILTERED**

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
128	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 133
129	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 134
130	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 135
131	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 136
132	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 137
133	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 138
134	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 139
135	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 140

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 35.1 [g] at 0.036 [s]
Min: -14.9 [g] at 0.092 [s]

V2P1 Head x



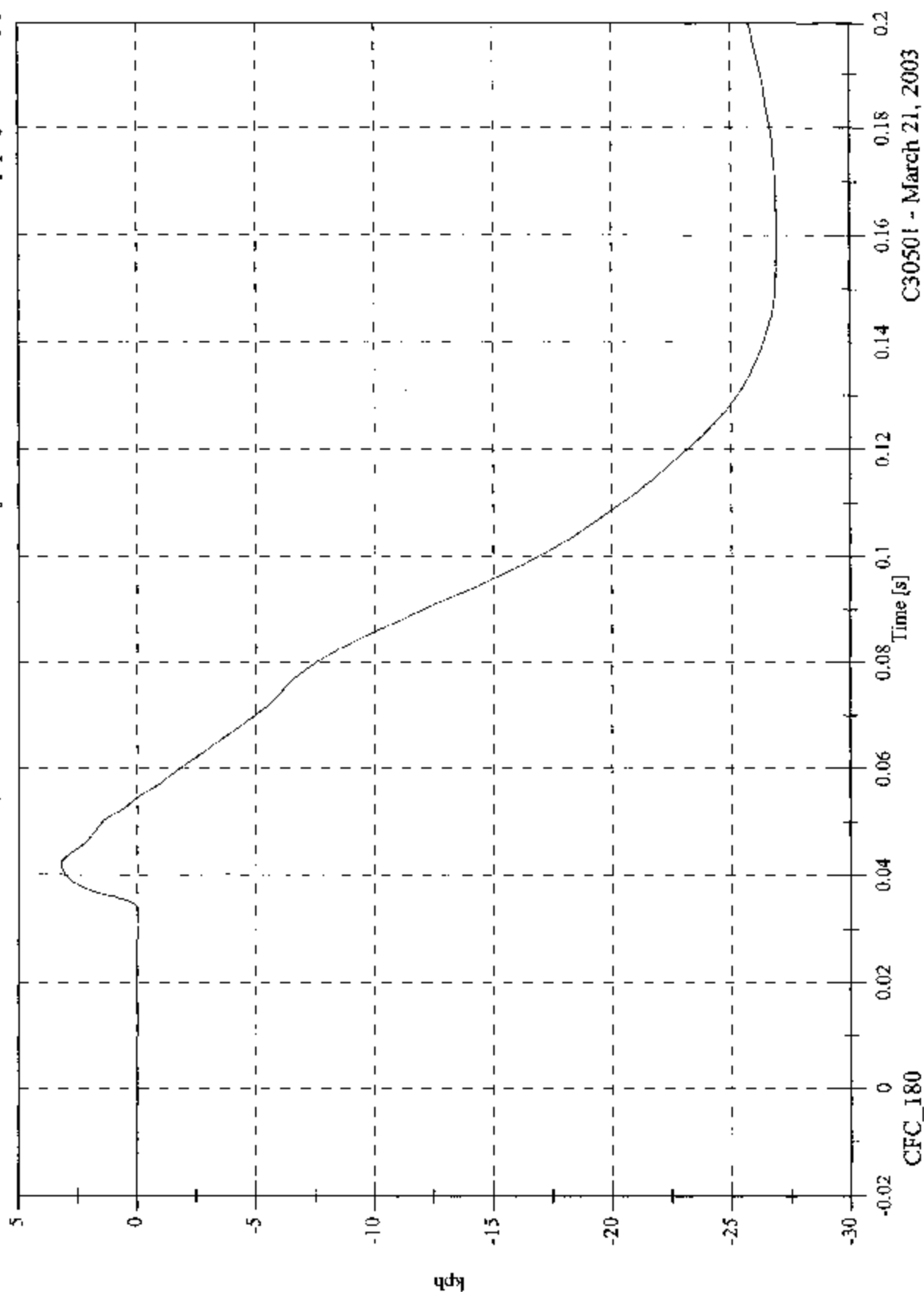
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 3.2 [kph] at 0.042 [s]

Min: -26.9 [kph] at 0.161 [s]

V2P1 Head x Velocity

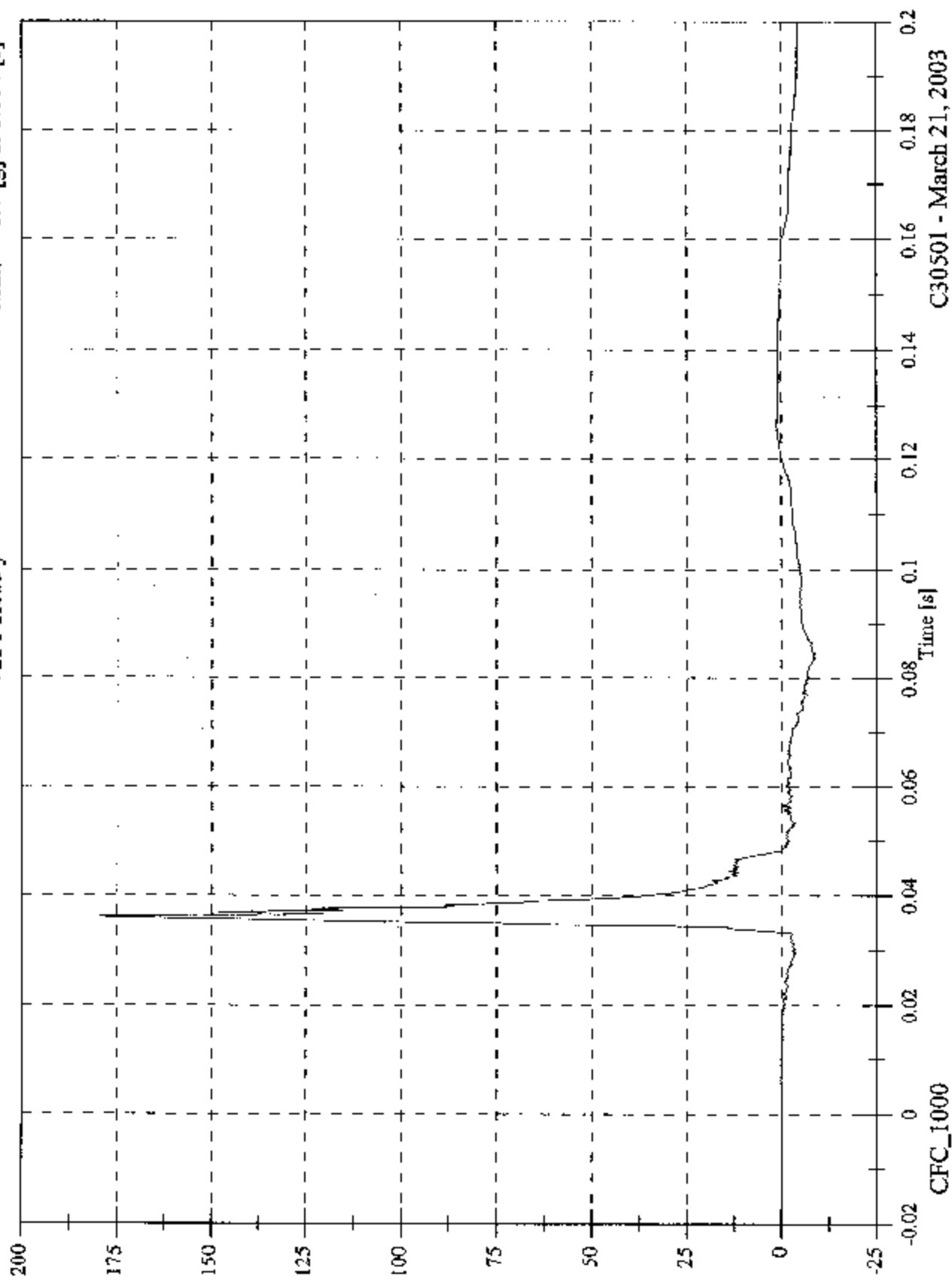


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 179.5 [g] at 0.036 [s]
Min: -8.7 [g] at 0.084 [s]

V2P1 Head y



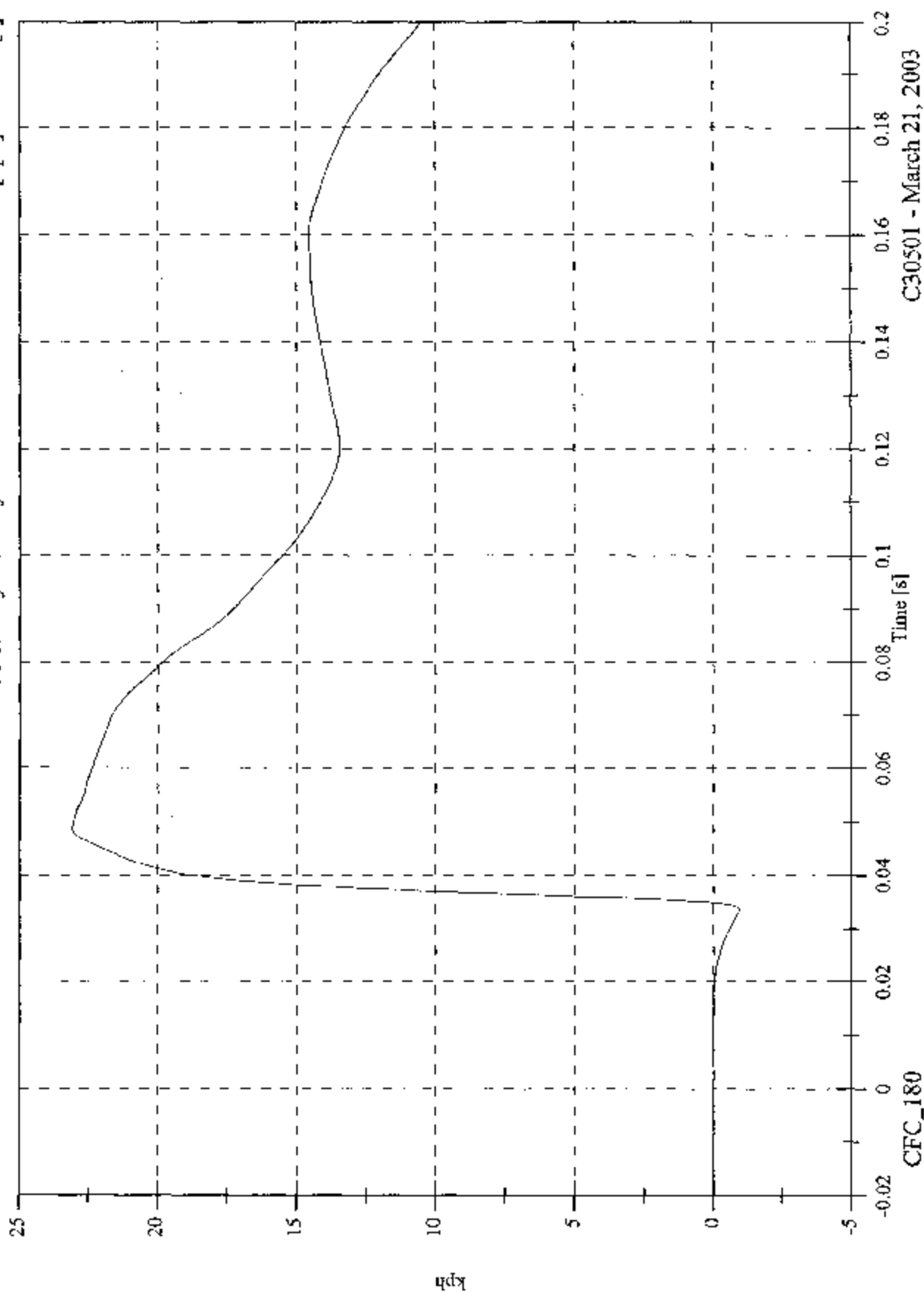
CFC_1000

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 23.1 [kph] at 0.049 [s]
Min: -1.0 [kph] at 0.033 [s]

V2P1 Head y Velocity

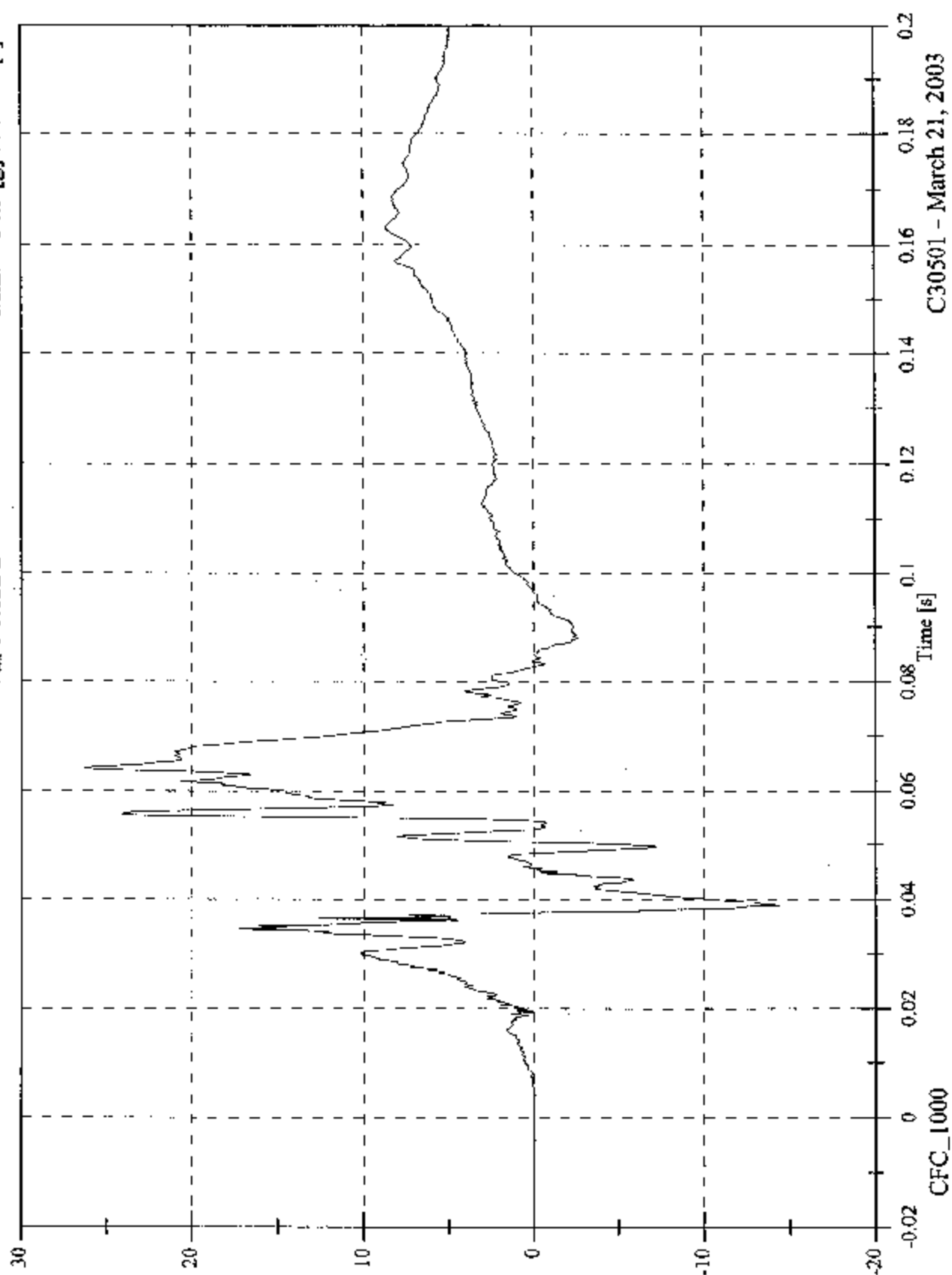


CFC_180

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 26.3 [g] at 0.064 [s]
Min: -14.3 [g] at 0.039 [s]

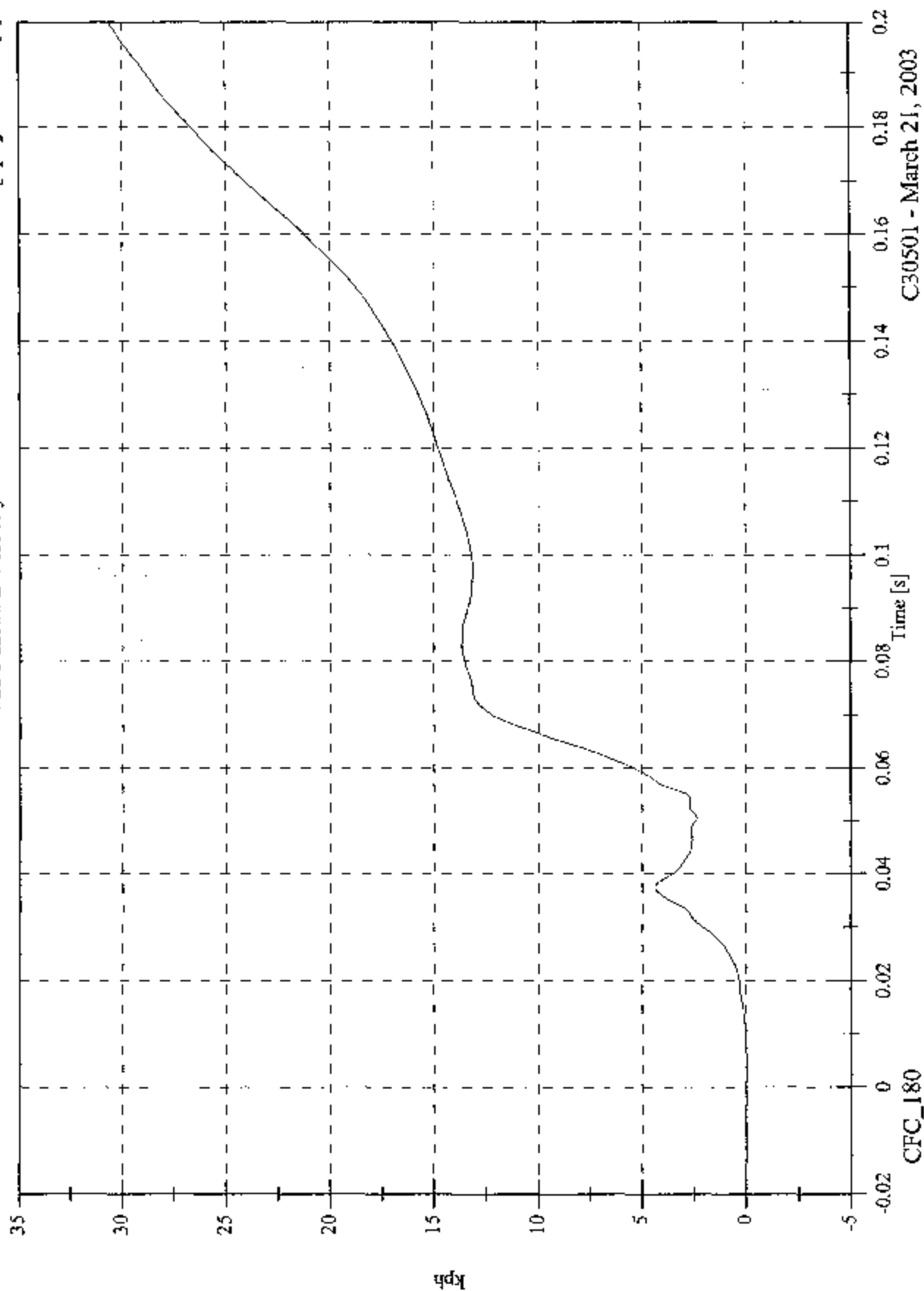
V2P1 Head z



C30501 - March 21, 2003

Max: 30.6 [kph] at 0.200 [s]
Min: -0.0 [kph] at 0.005 [s]

V2P1 Head z Velocity

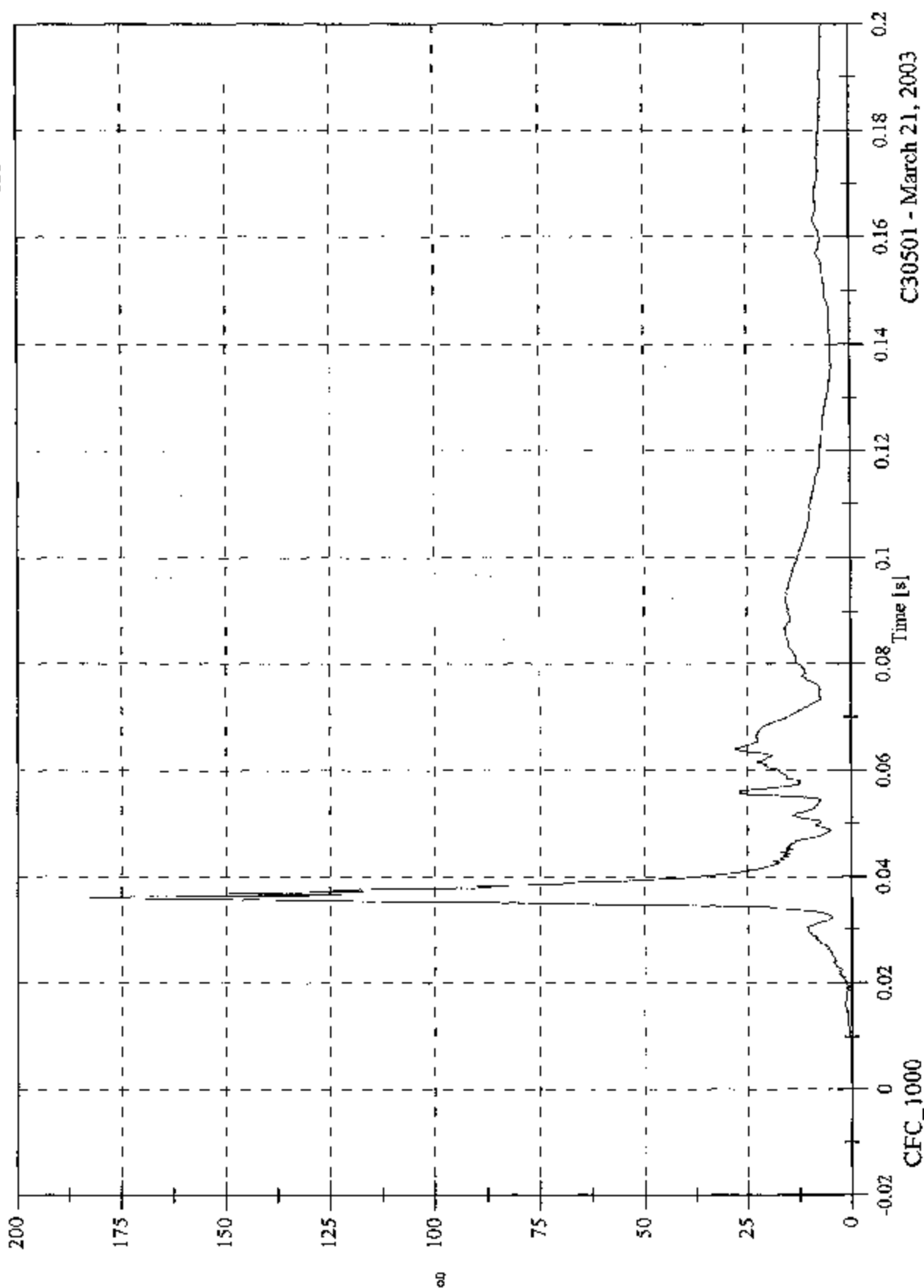


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 183.0 [g] at 0.036 [s]
Min: 0.0 [g] at -0.008 [s]

V2P1 Head Resultant



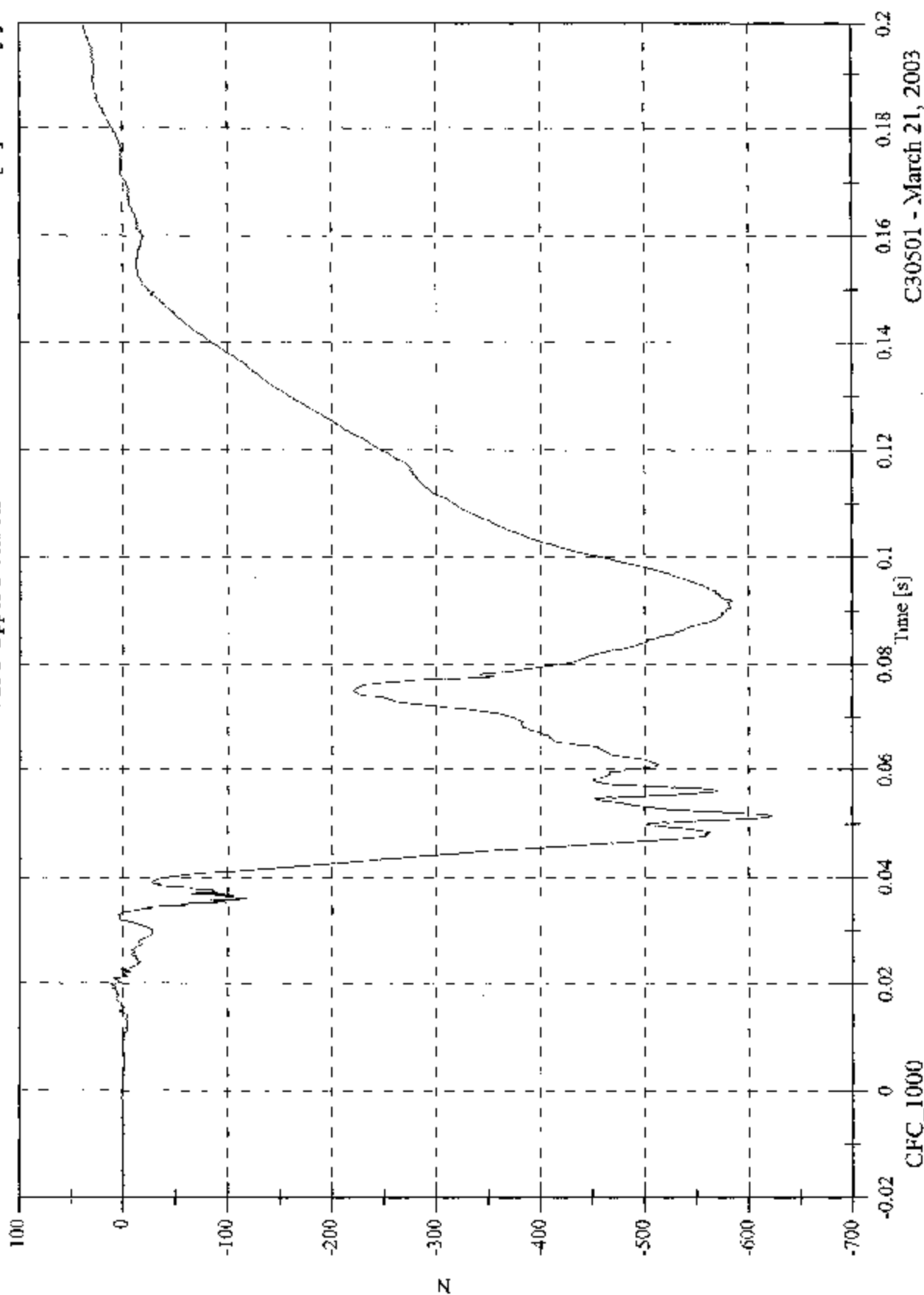
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 38.8 [N] at 0.200 [s]

Min: -622.6 [N] at 0.051 [s]

V2P1 Upper Neck F_x

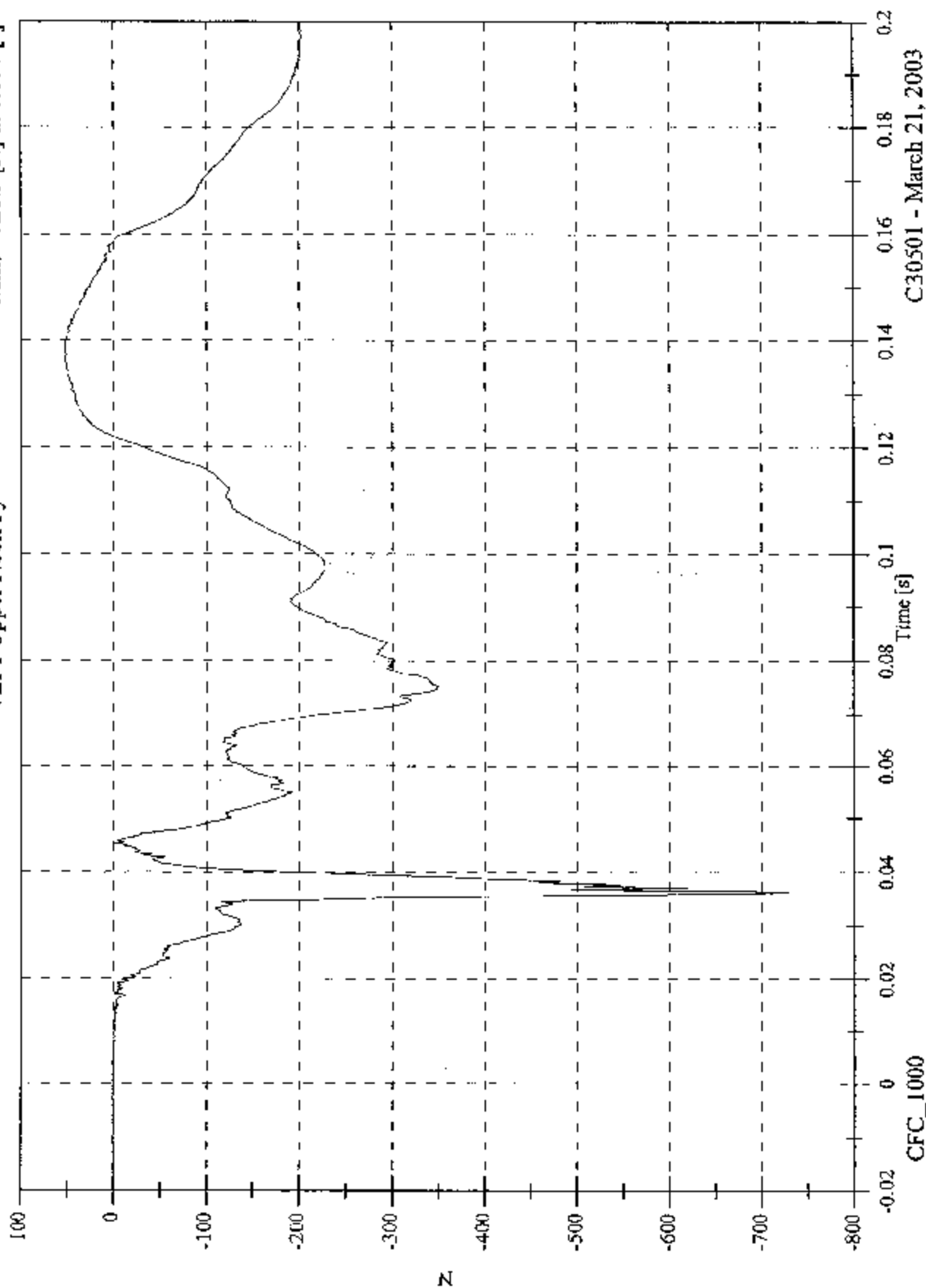


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 52.8 [N] at 0.139 [s]
Min: -728.9 [N] at 0.036 [s]

V2P1 Upper Neck Fy



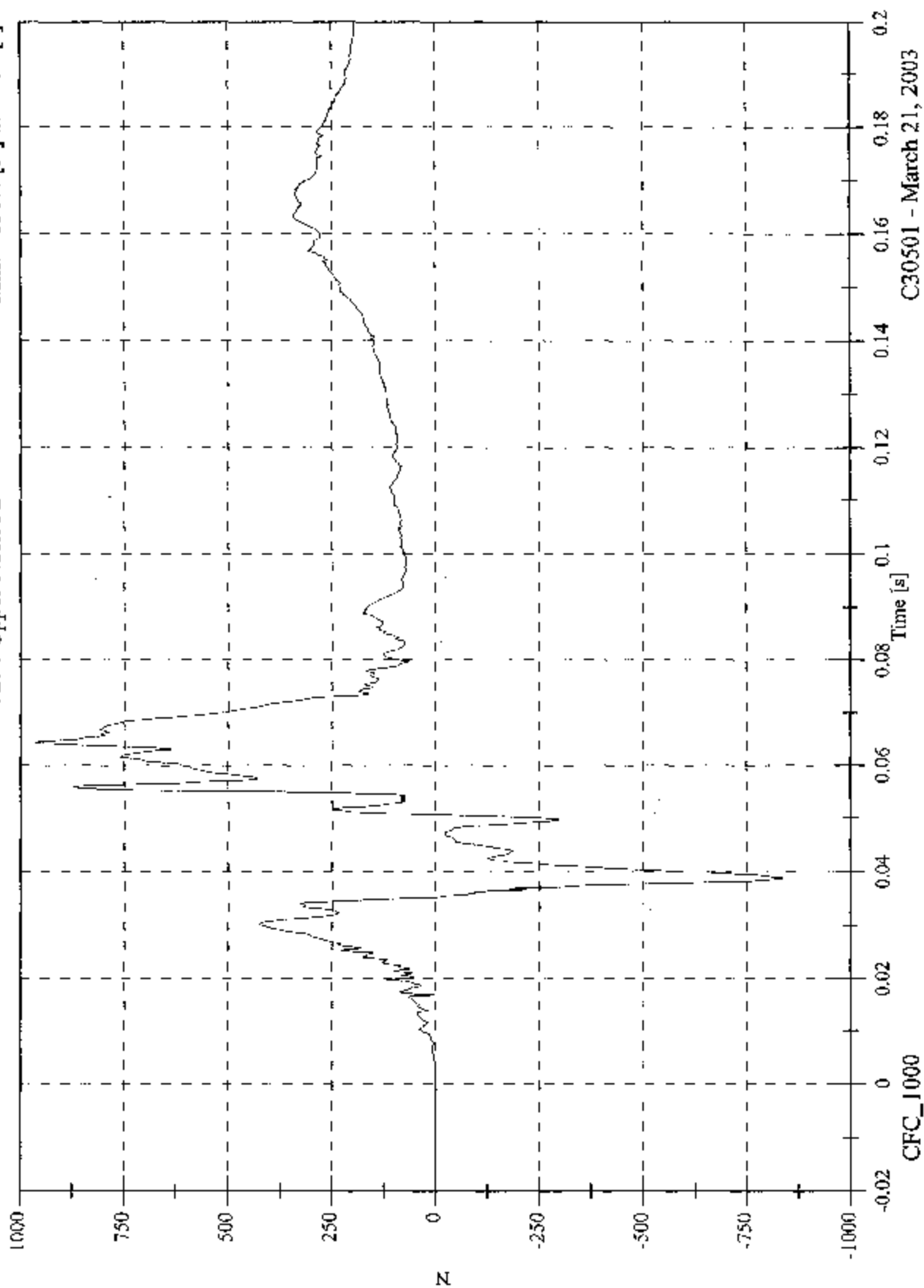
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

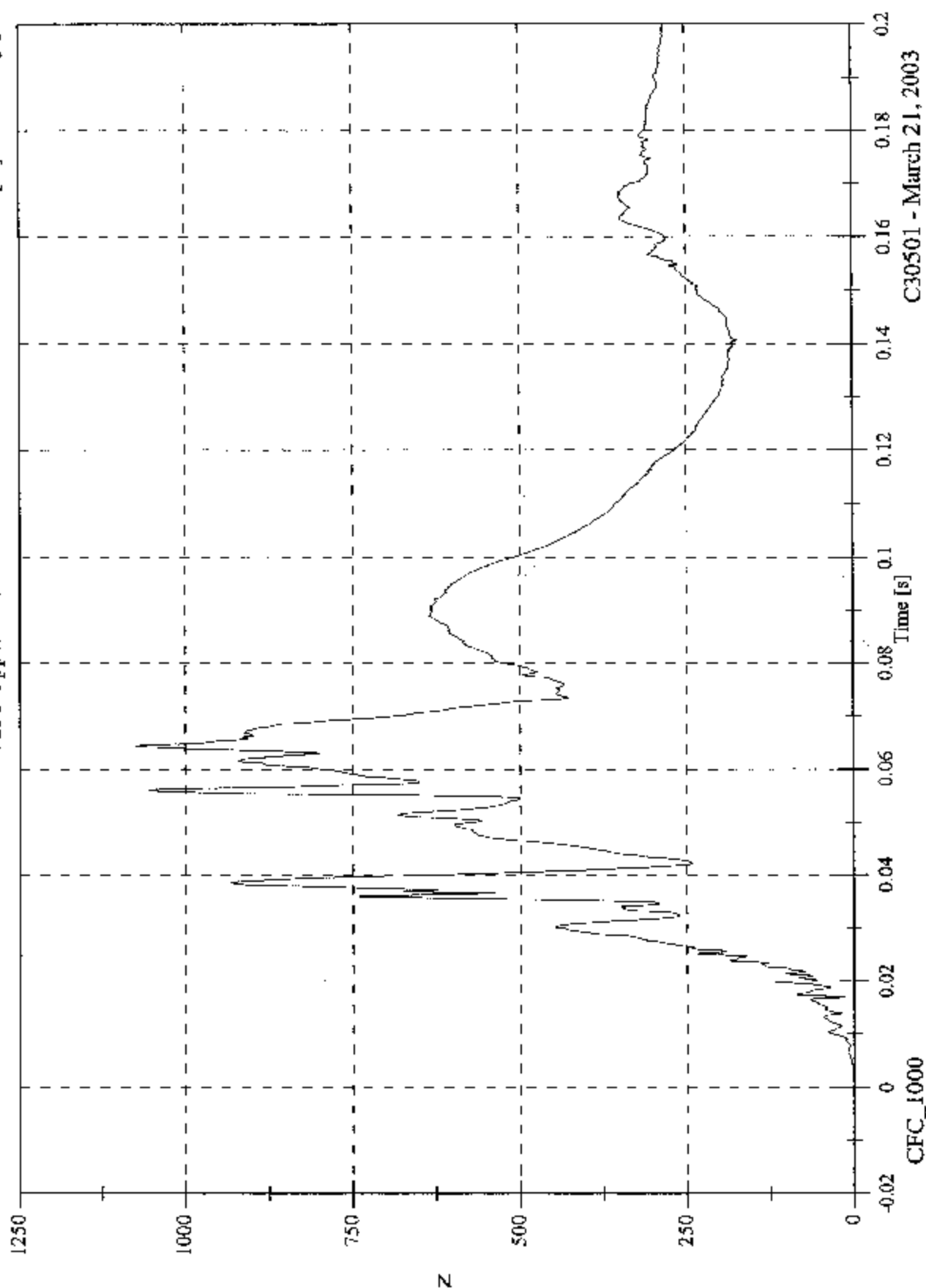
Max: 965.7 [N] at 0.064 [s]

Min: -838.4 [N] at 0.039 [s]

V2P1 Upper Neck Fz

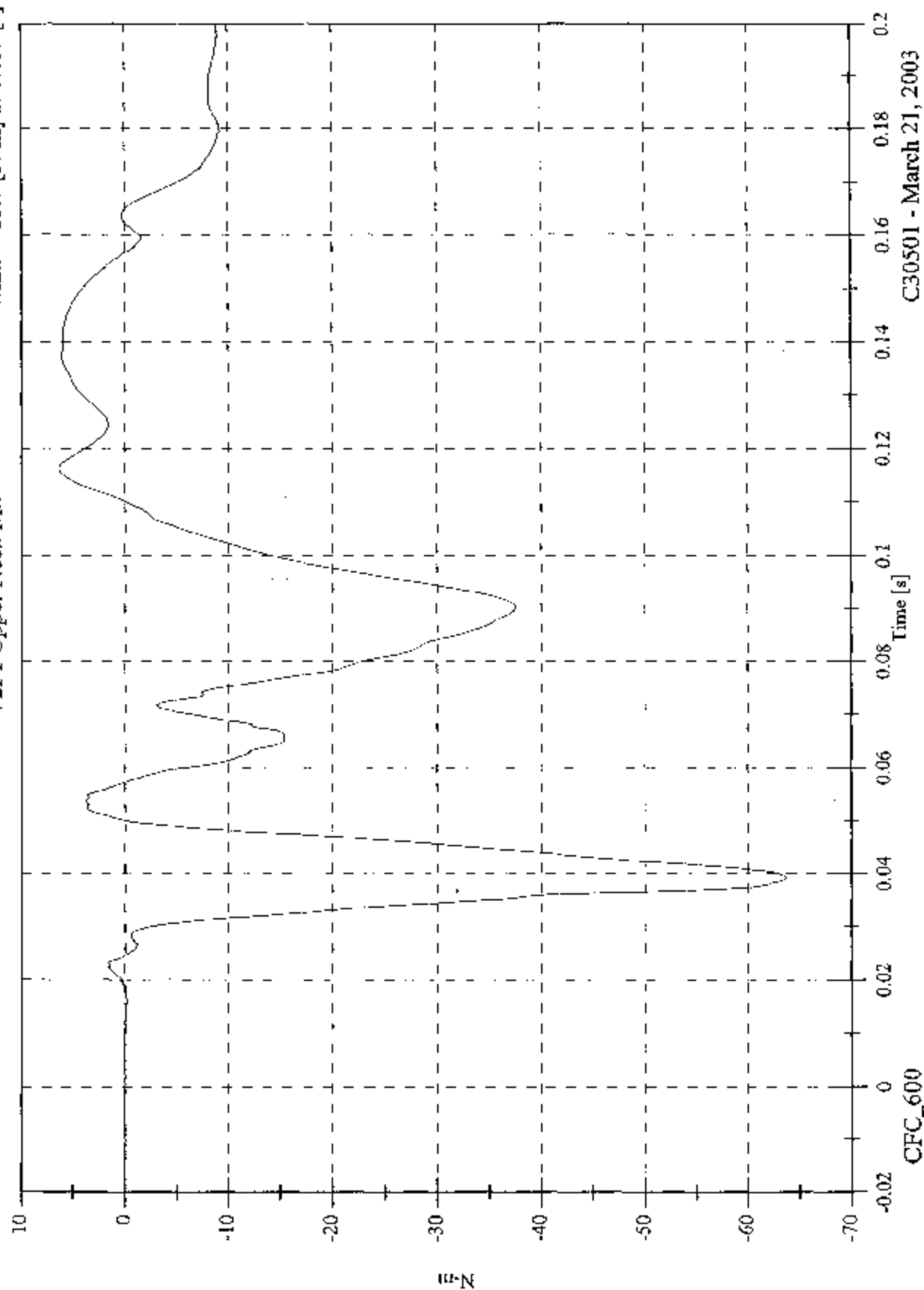


C30501 - March 21, 2003



Max: 6.3 [N-m] at 0.116 [s]
Min: -63.7 [N-m] at 0.039 [s]

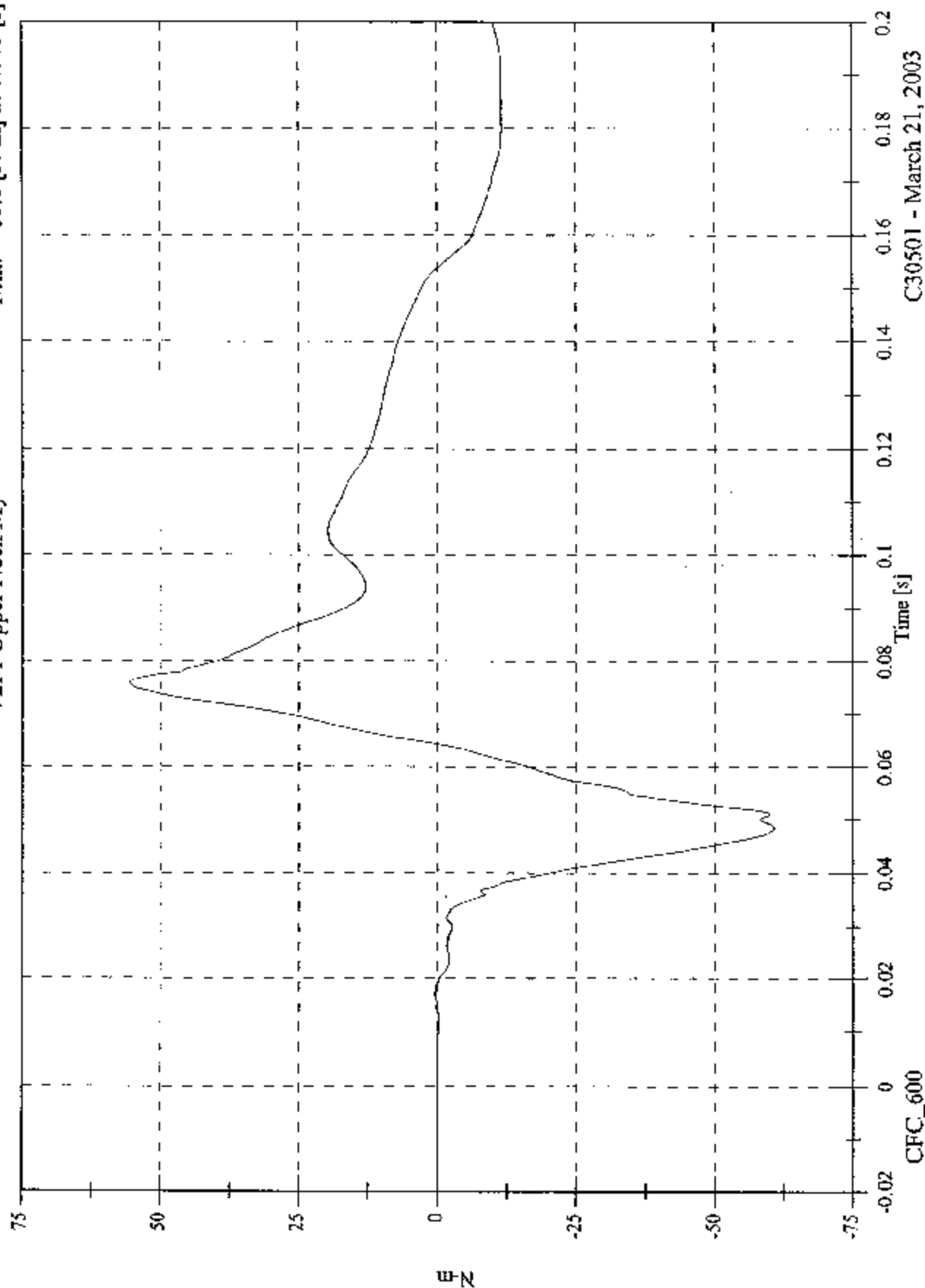
V2P1 Upper Neck Mx



C30501 - March 21, 2003

V2PI Upper Neck My

Max: 55.5 [N-m] at 0.076 [s]
Min: -60.8 [N-m] at 0.048 [s]

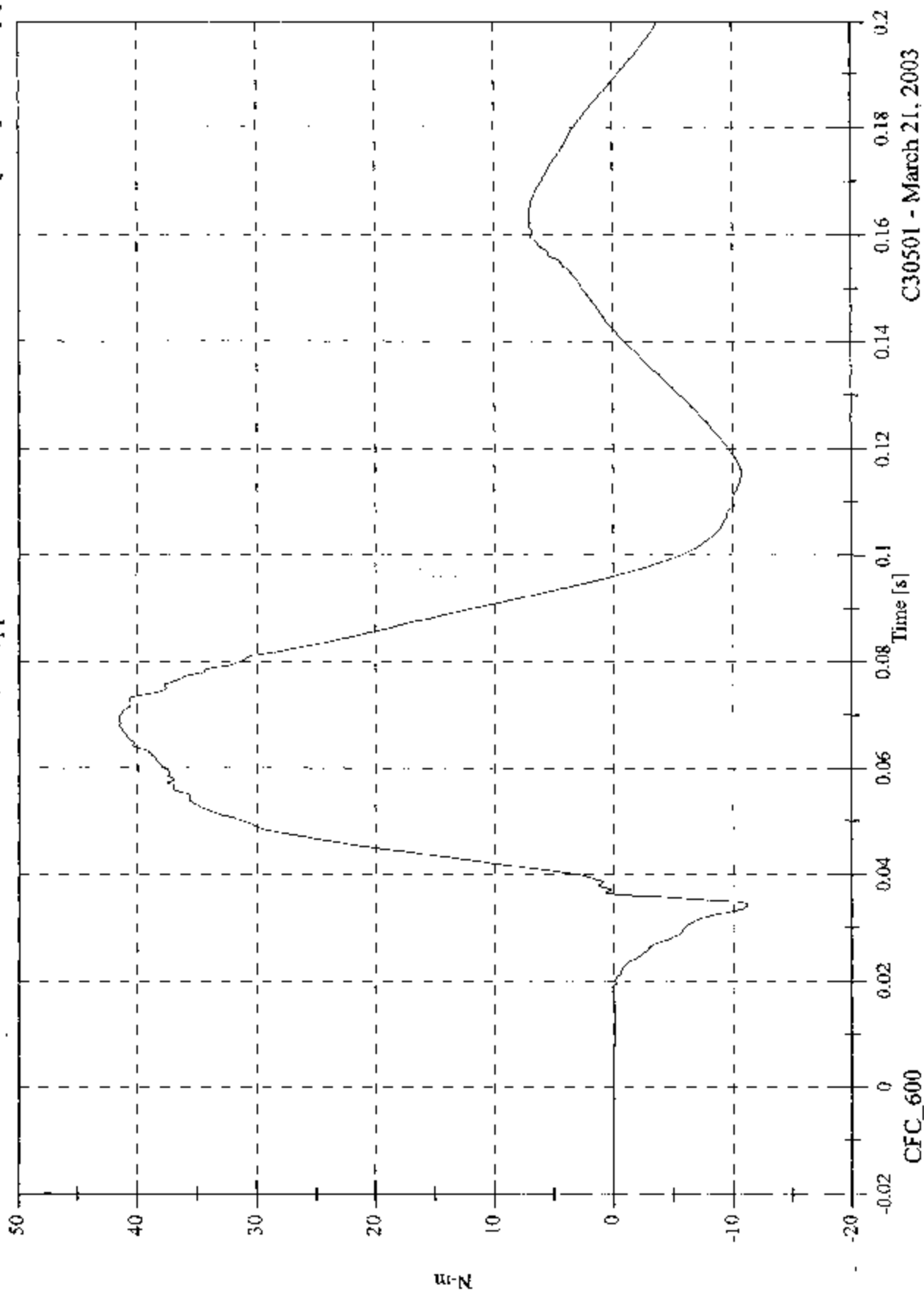


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 41.6 [N-m] at 0.069 [s]
Min: -11.2 [N-m] at 0.034 [s]

V2P1 Upper Neck Mz

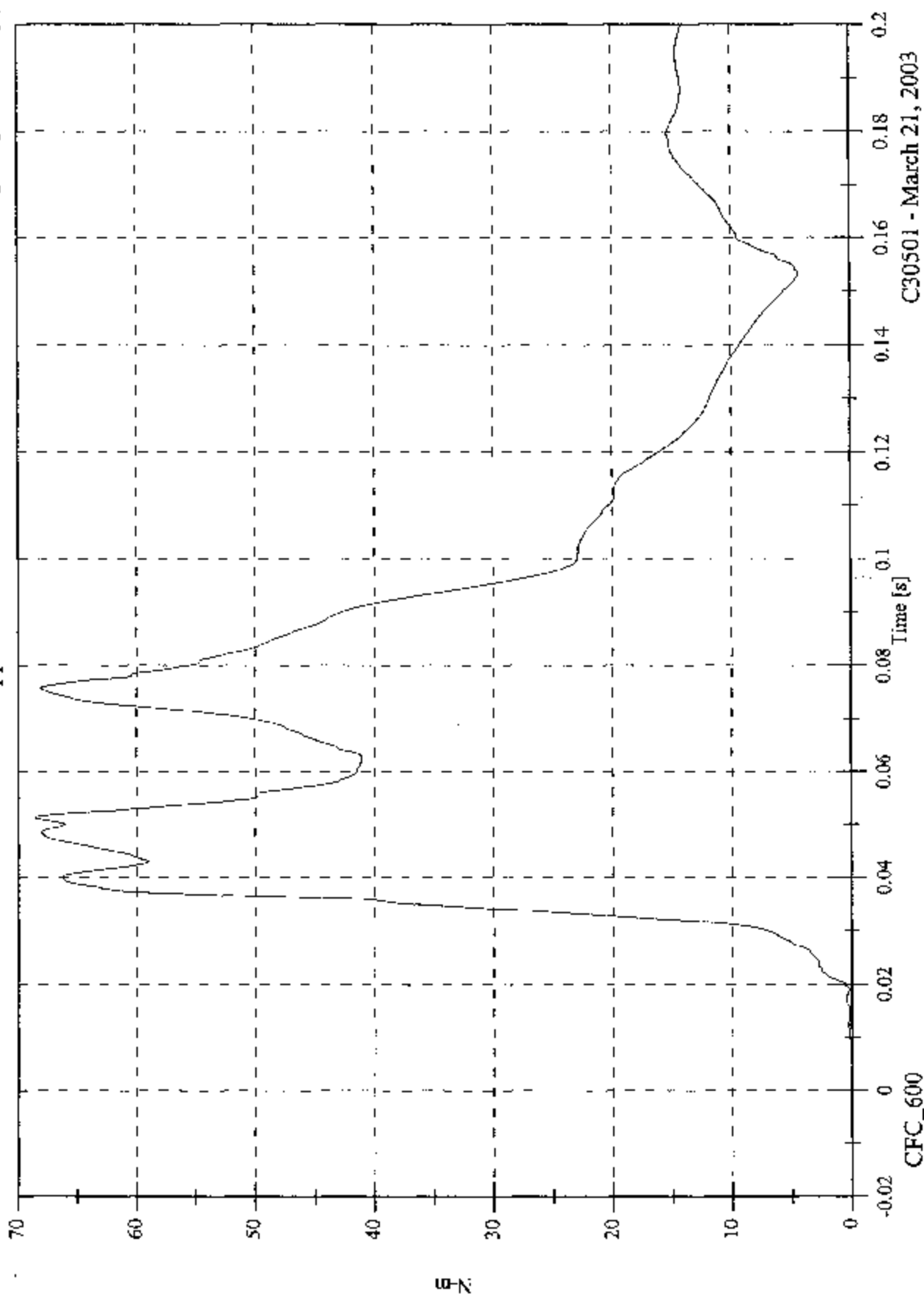


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 68.6 [N-m] at 0.051 [s]
Min: 0.0 [N-m] at -0.002 [s]

V2P1 Upper Neck M Resultant

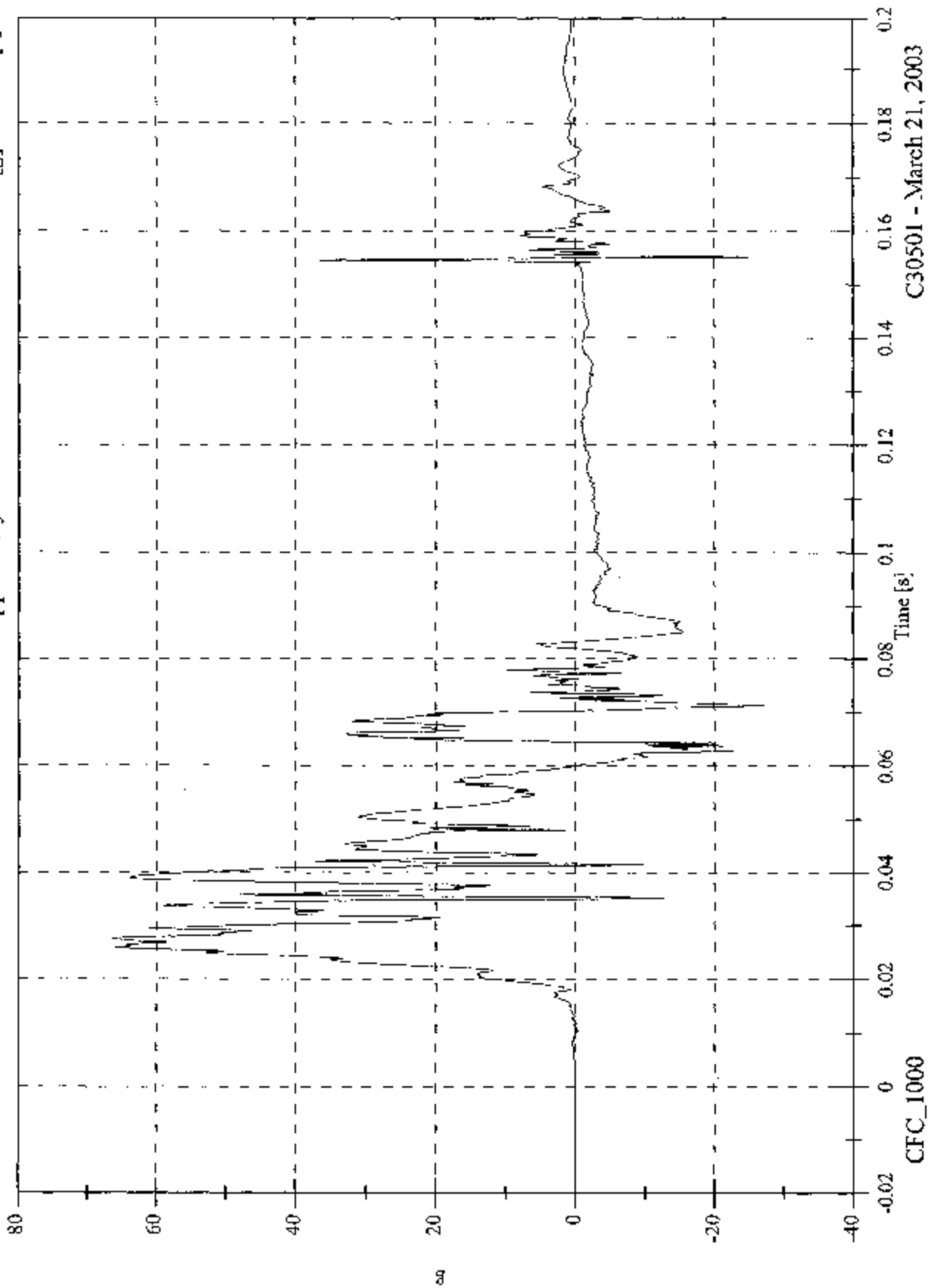


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 66.3 [g] at 0.028 [s]
Min: -27.3 [g] at 0.071 [s]

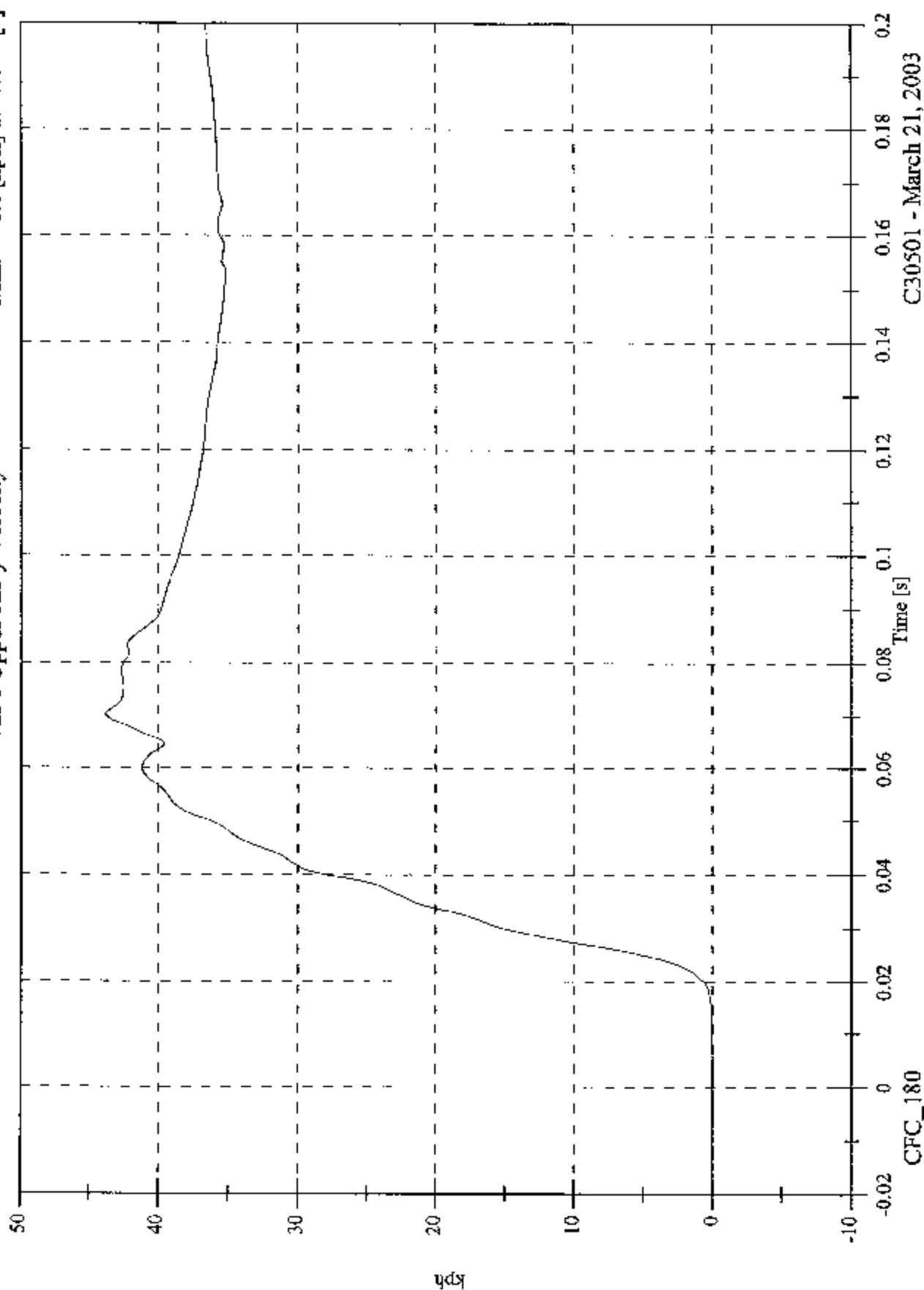
V2P1 Upper Rib y



2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 43.8 [kph] at 0.070 [s]
Min: -0.0 [kph] at -0.013 [s]

V2P1 Upper Rib y Velocity



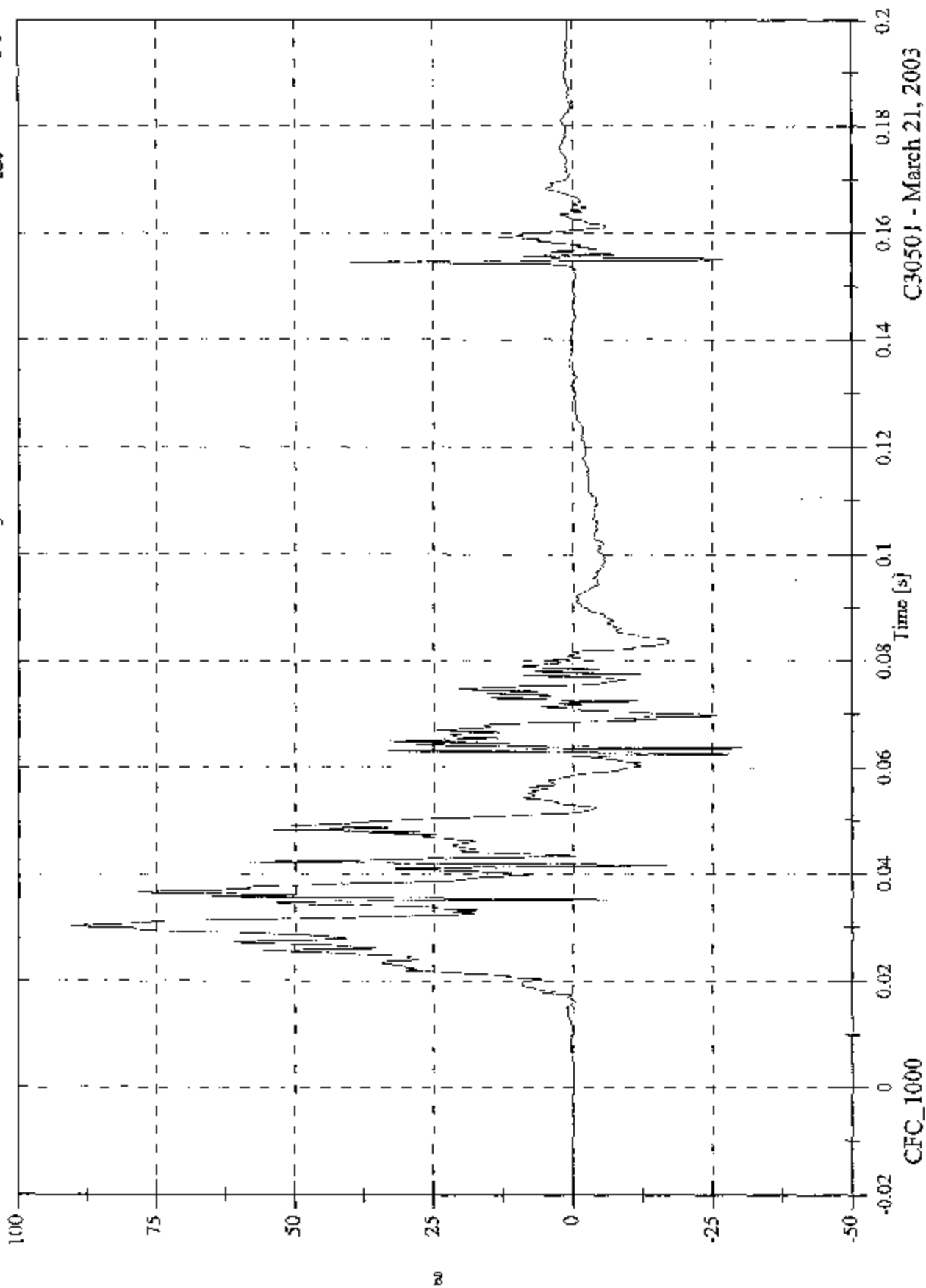
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P1 Lower Rib y

Max: 90.5 [g] at 0.030 [s]
Min: -30.3 [g] at 0.064 [s]

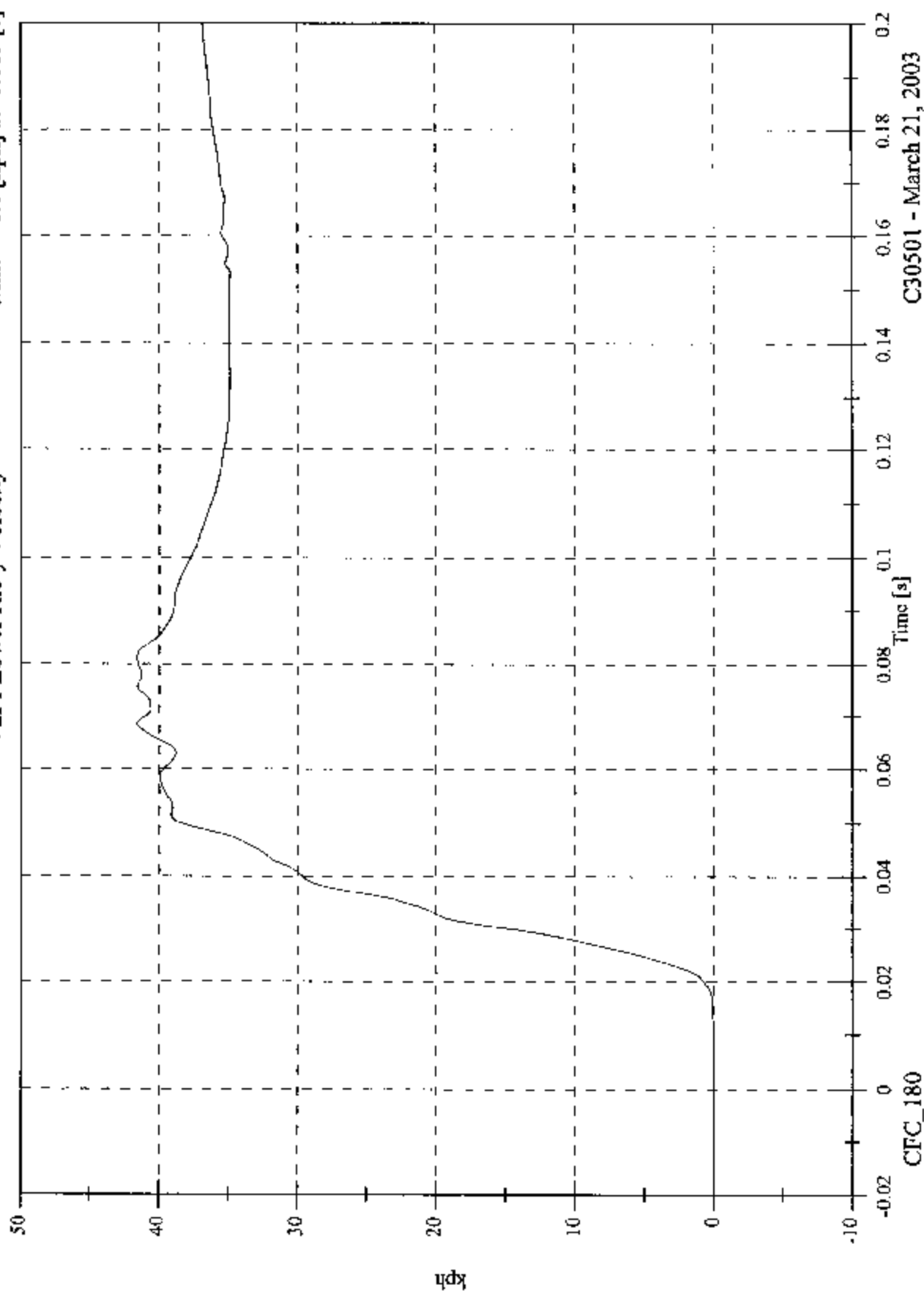


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 41.6 [kph] at 0.068 [s]
Min: -0.0 [kph] at -0.015 [s]

V2P1 Lower Rib y Velocity

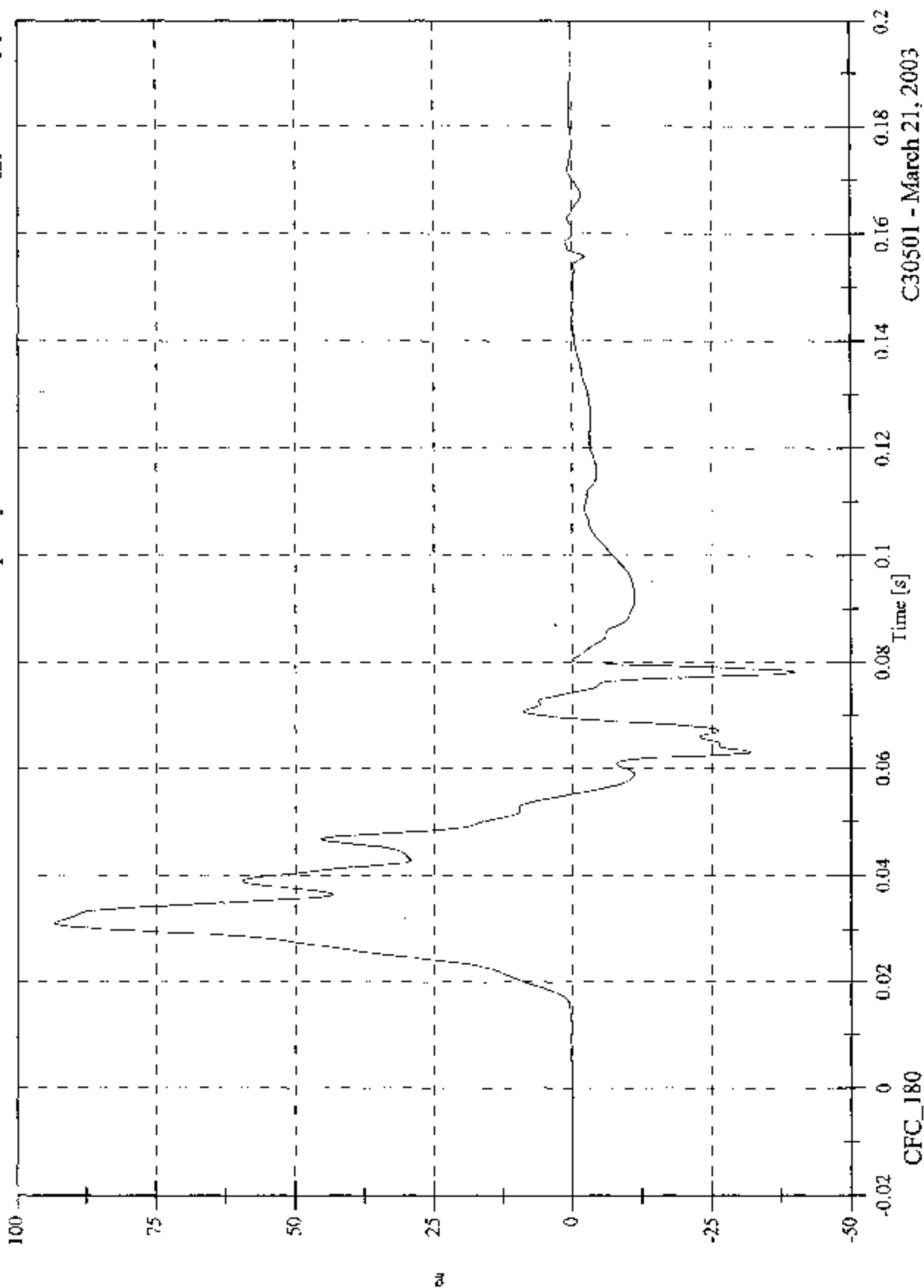


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 93.3 [g] at 0.031 [s]
Min: -40.1 [g] at 0.078 [s]

V2P1 Lower Spine y

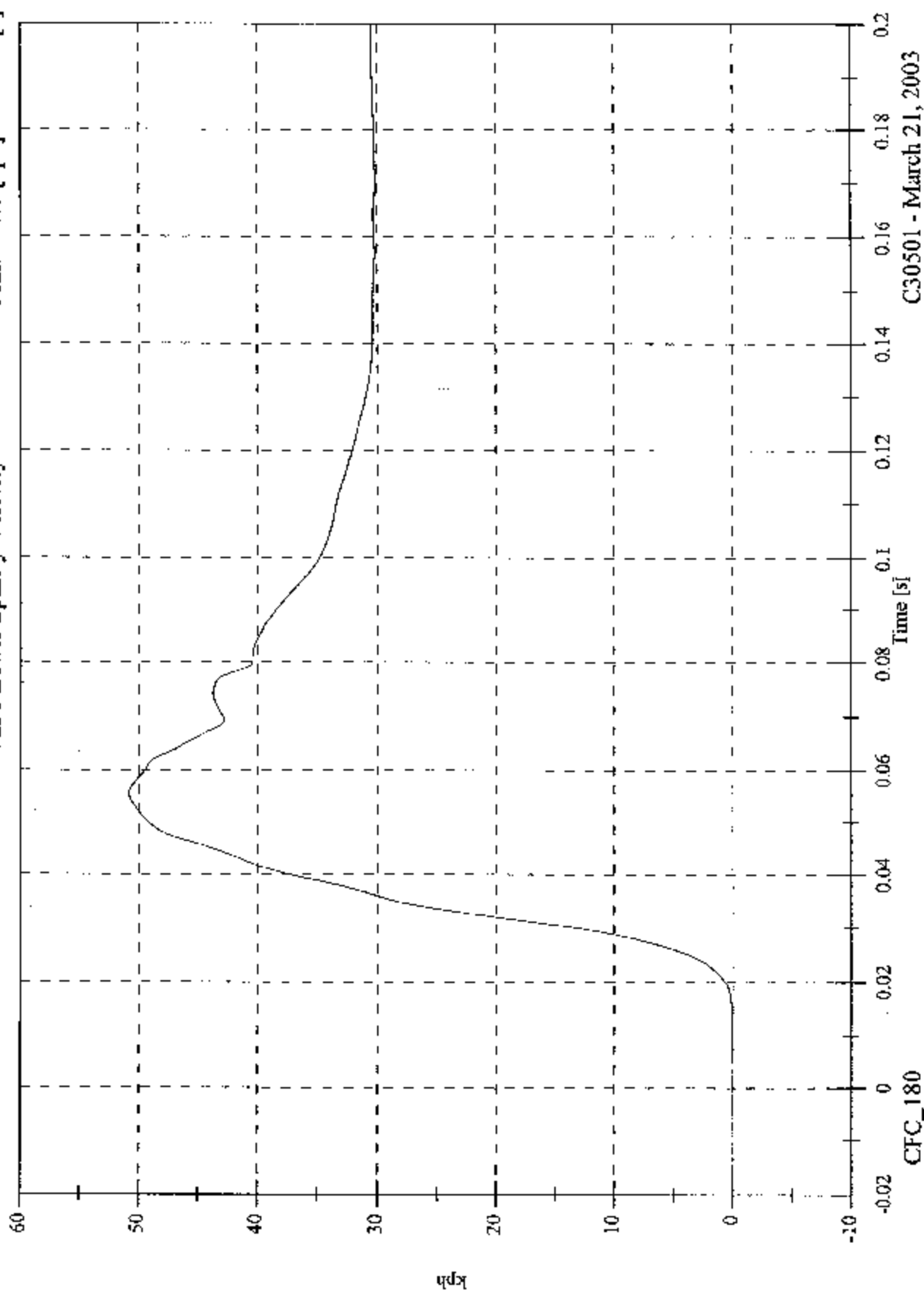


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P1 Lower Spine y Velocity

Max: 50.8 [kph] at 0.055 [s]
Min: -0.0 [kph] at -0.018 [s]



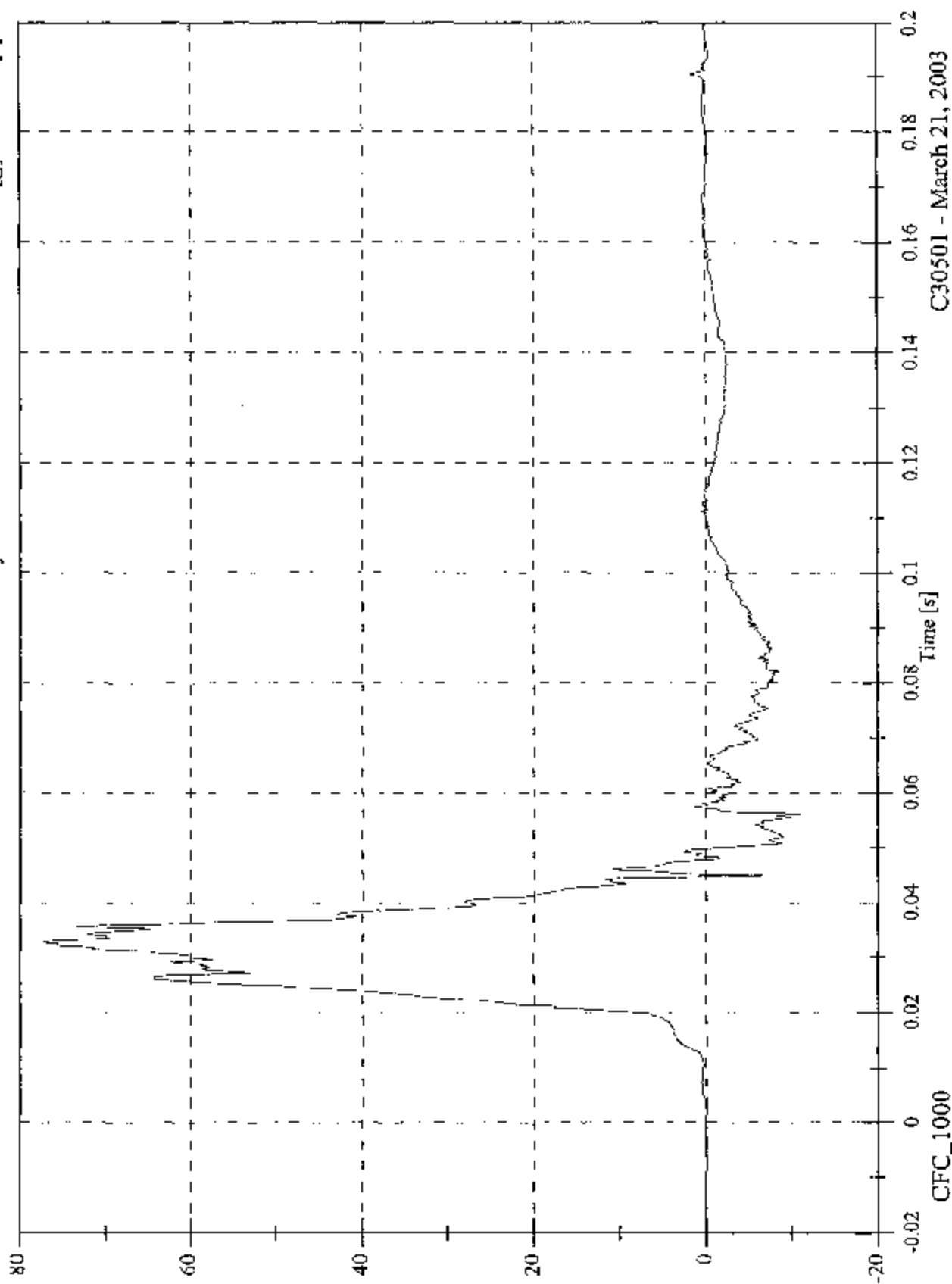
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 77.4 [g] at 0.033 [s]
Min: -10.9 [g] at 0.056 [s]

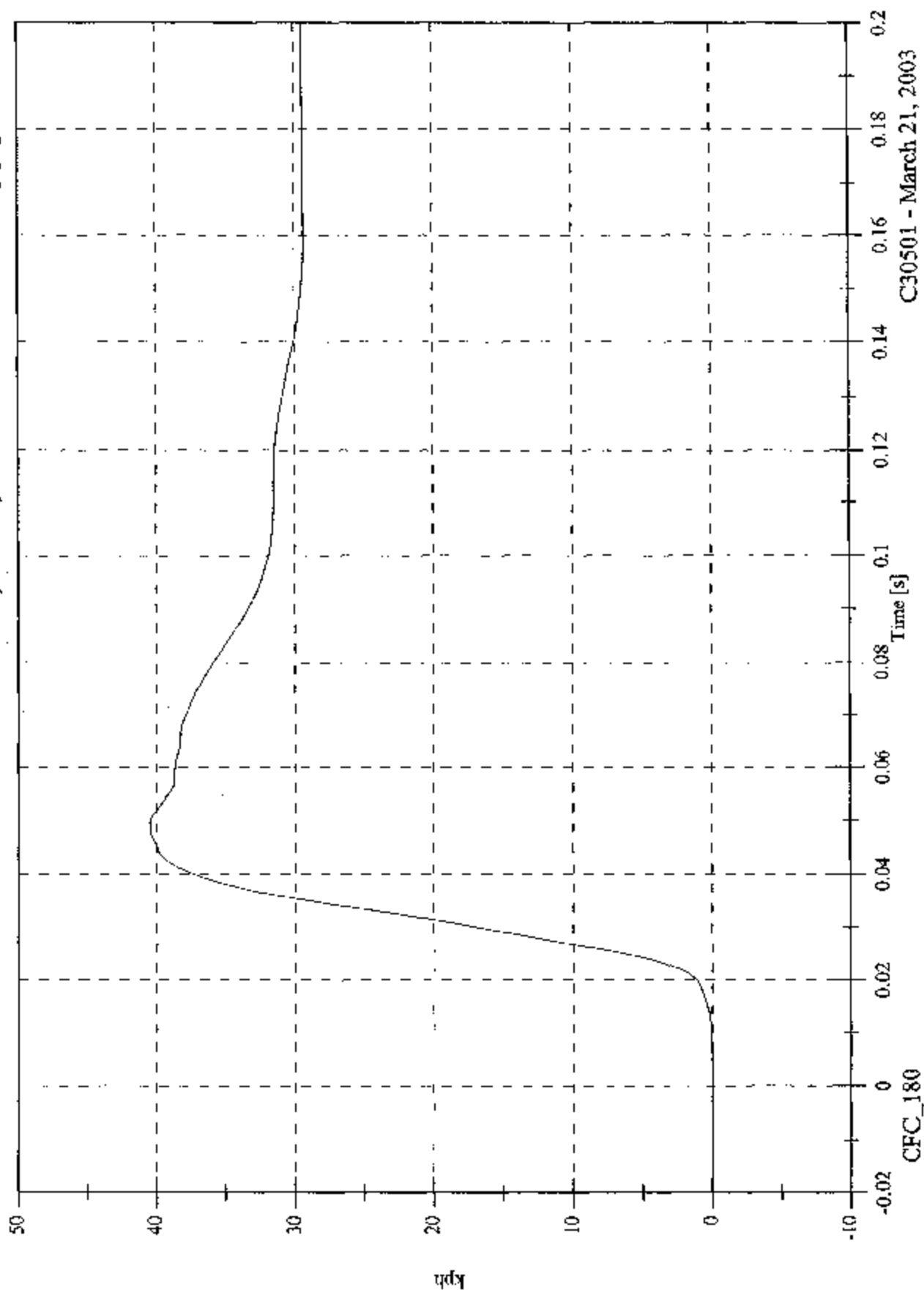
V2P1 Pelvic y



C30501 - March 21, 2003

Max: 40.5 [kph] at 0.050 [s]
Min: -0.0 [kph] at -0.020 [s]

V2P1 Pelvic y Velocity



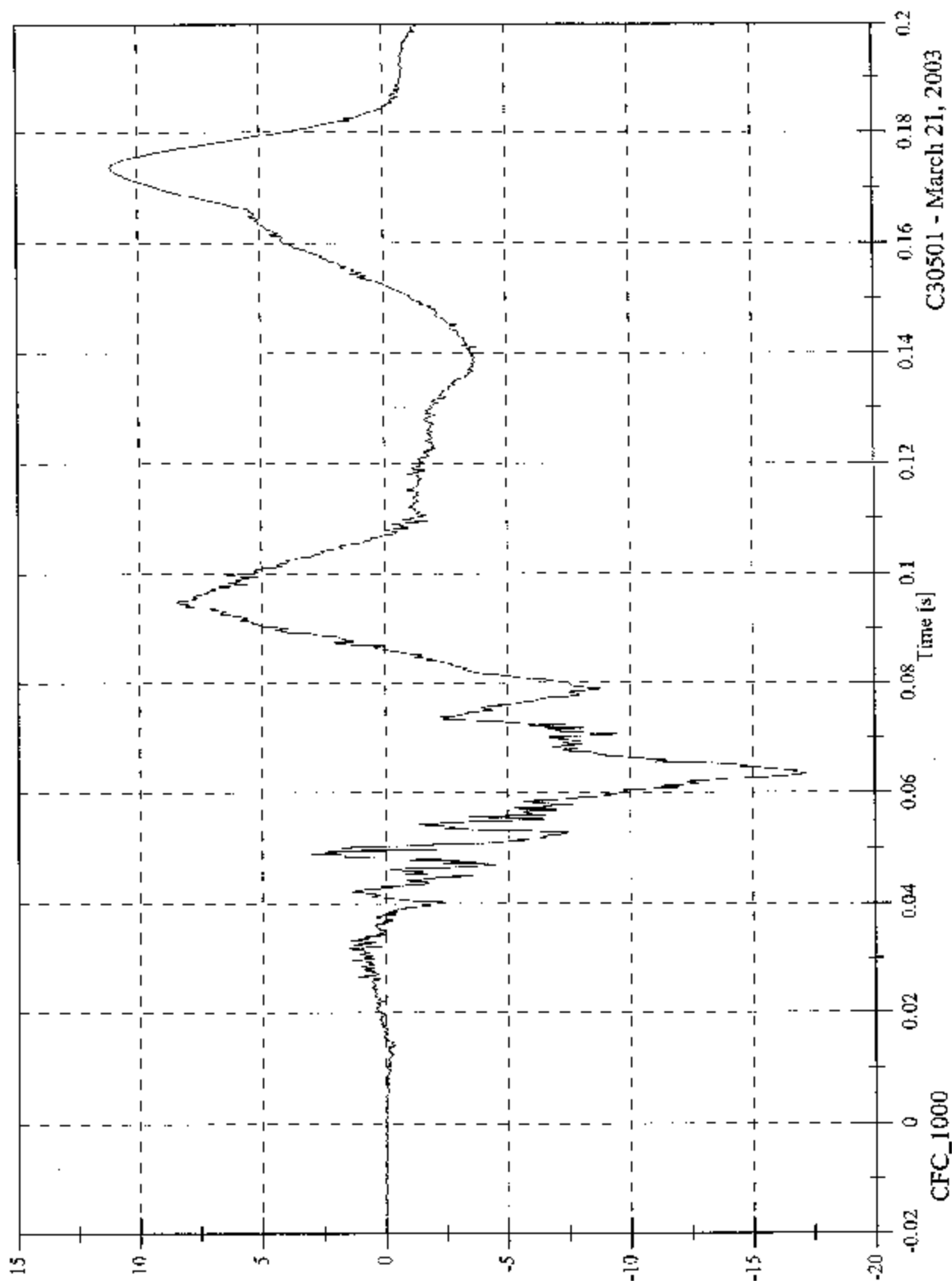
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 11.1 [g] at 0.174 [s]
Min: -17.2 [g] at 0.064 [s]

V2P4 Head x

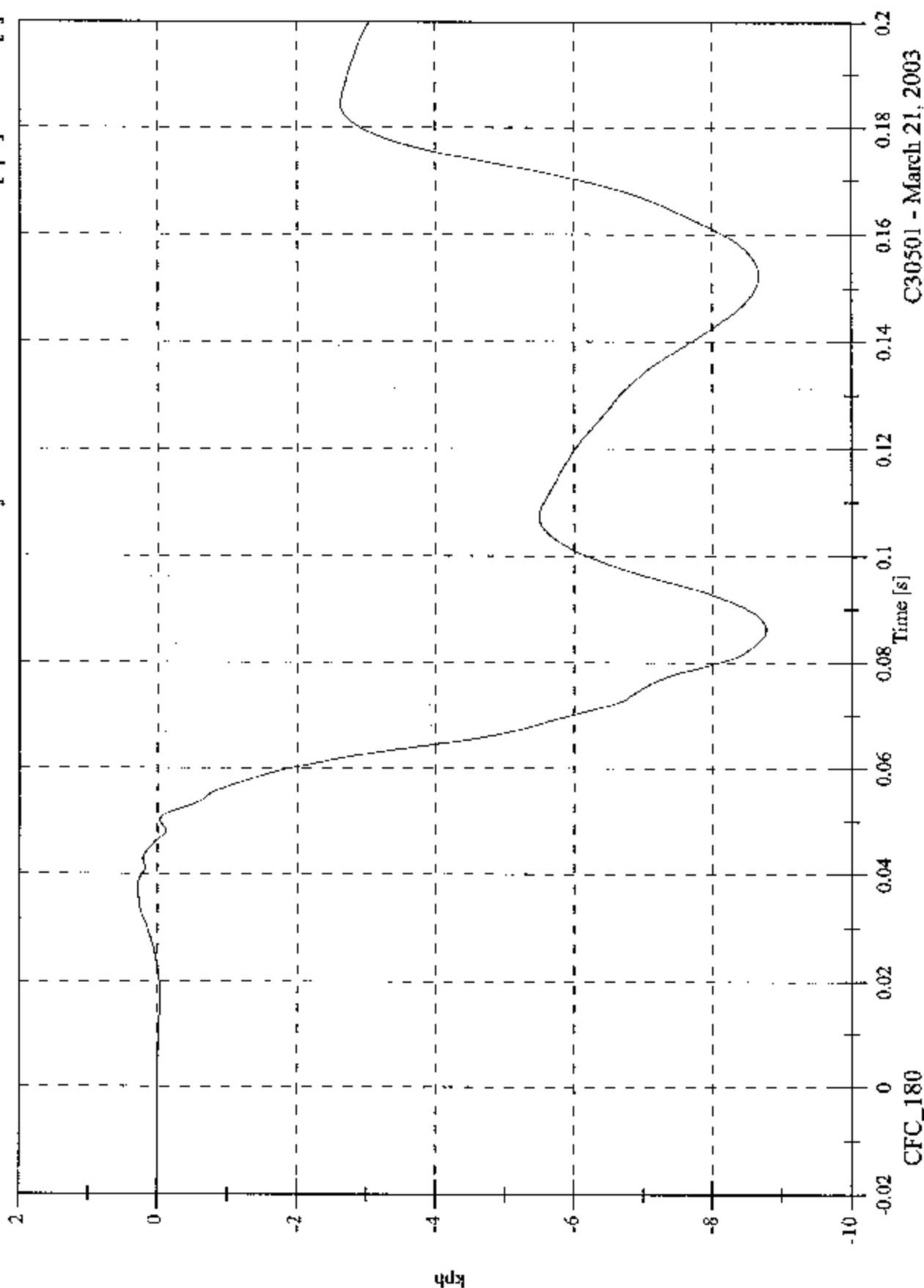


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Head x Velocity

Max: 0.3 [kph] at 0.038 [s]
Min: -8.8 [kph] at 0.086 [s]

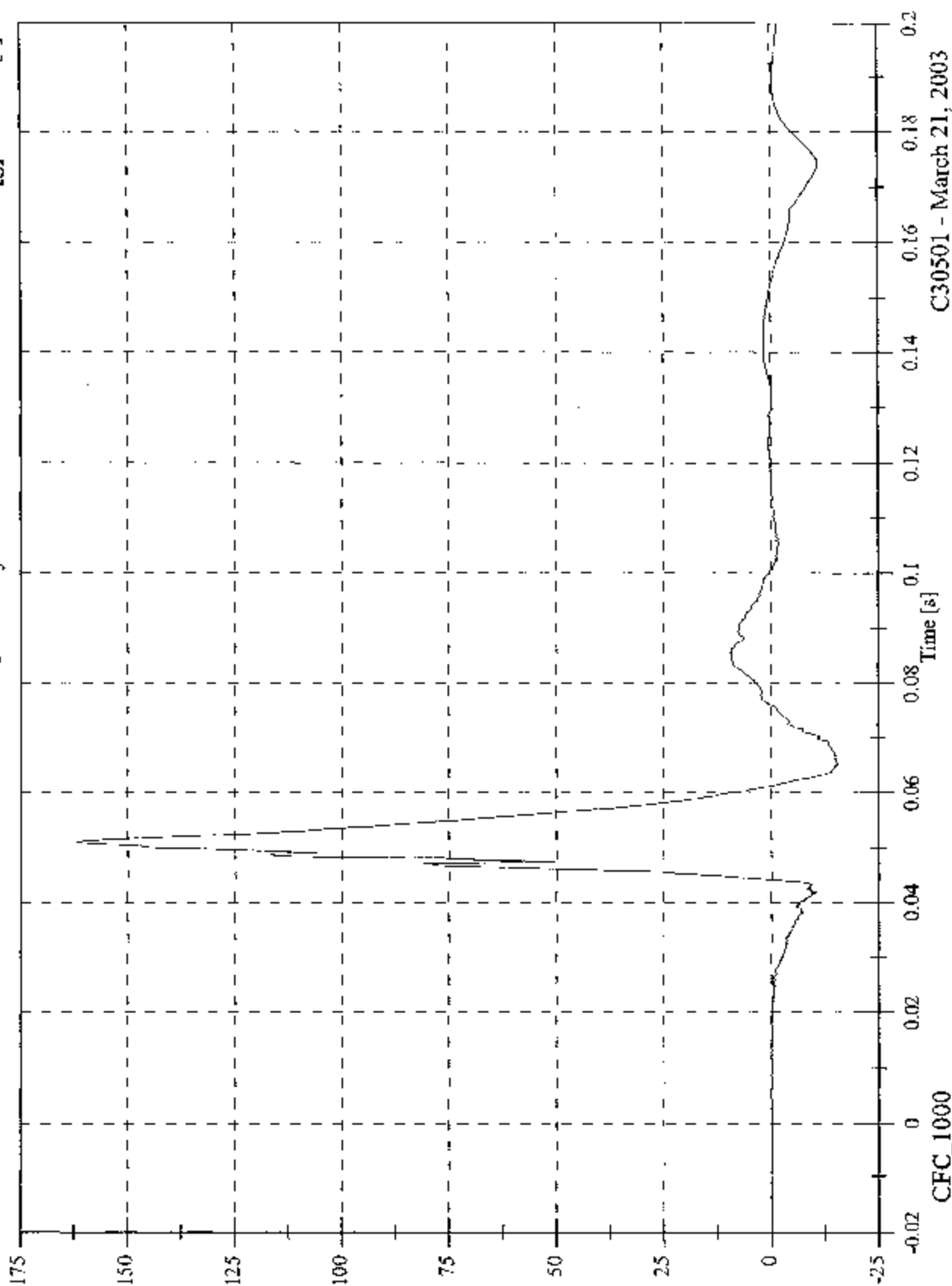


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 162.0 [g] at 0.051 [s]
Min: -15.5 [g] at 0.066 [s]

V2P4 Head y



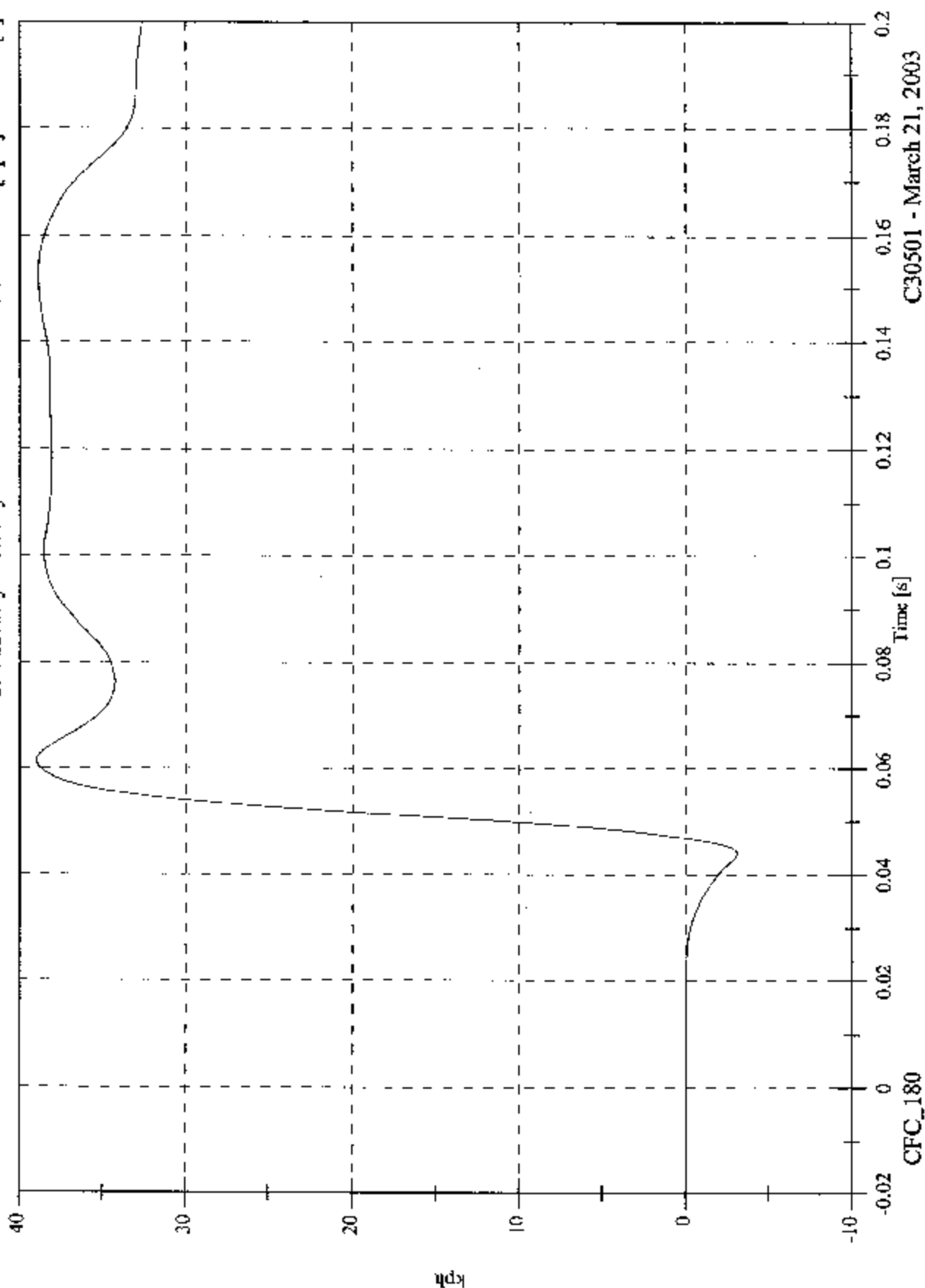
CFC_1000

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 39.0 [kph] at 0.061 [s]
Min: -3.1 [kph] at 0.044 [s]

V2P4 Head y Velocity

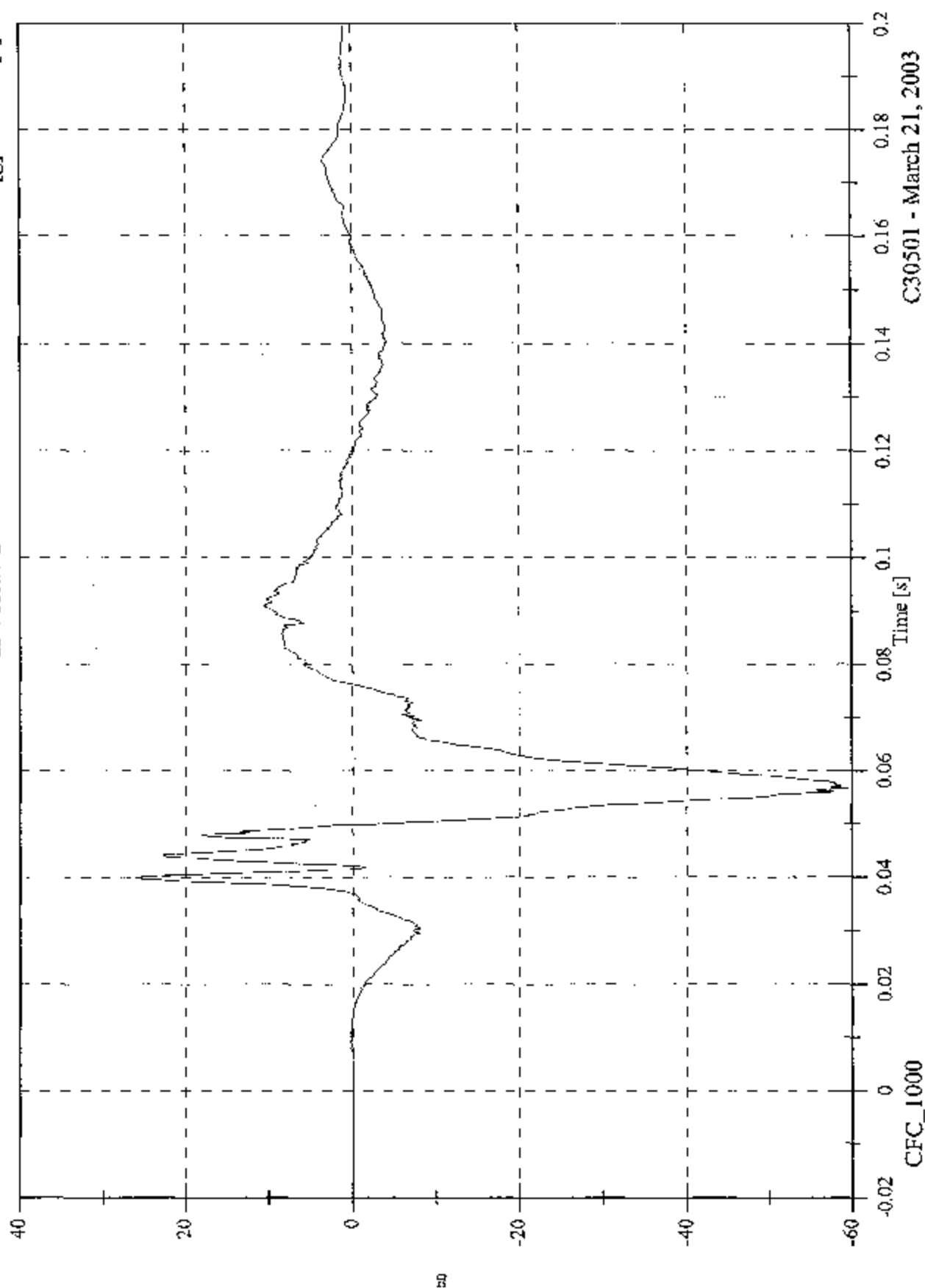


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 26.0 [g] at 0.040 [s]
Min: -59.6 [g] at 0.057 [s]

V2P4 Head z

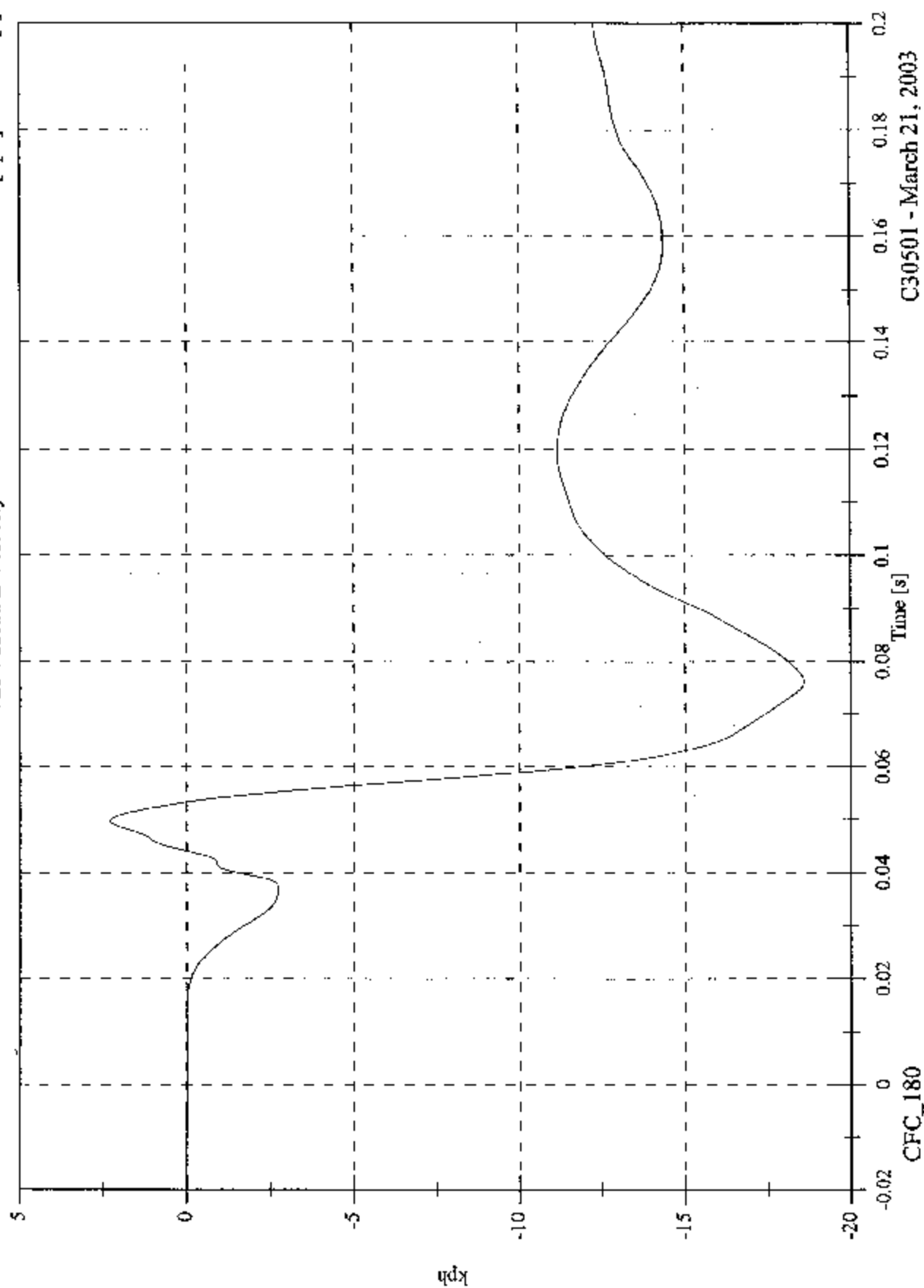


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 2.3 [kph] at 0.050 [s]
Min: -18.6 [kph] at 0.076 [s]

V2P4 Head z Velocity

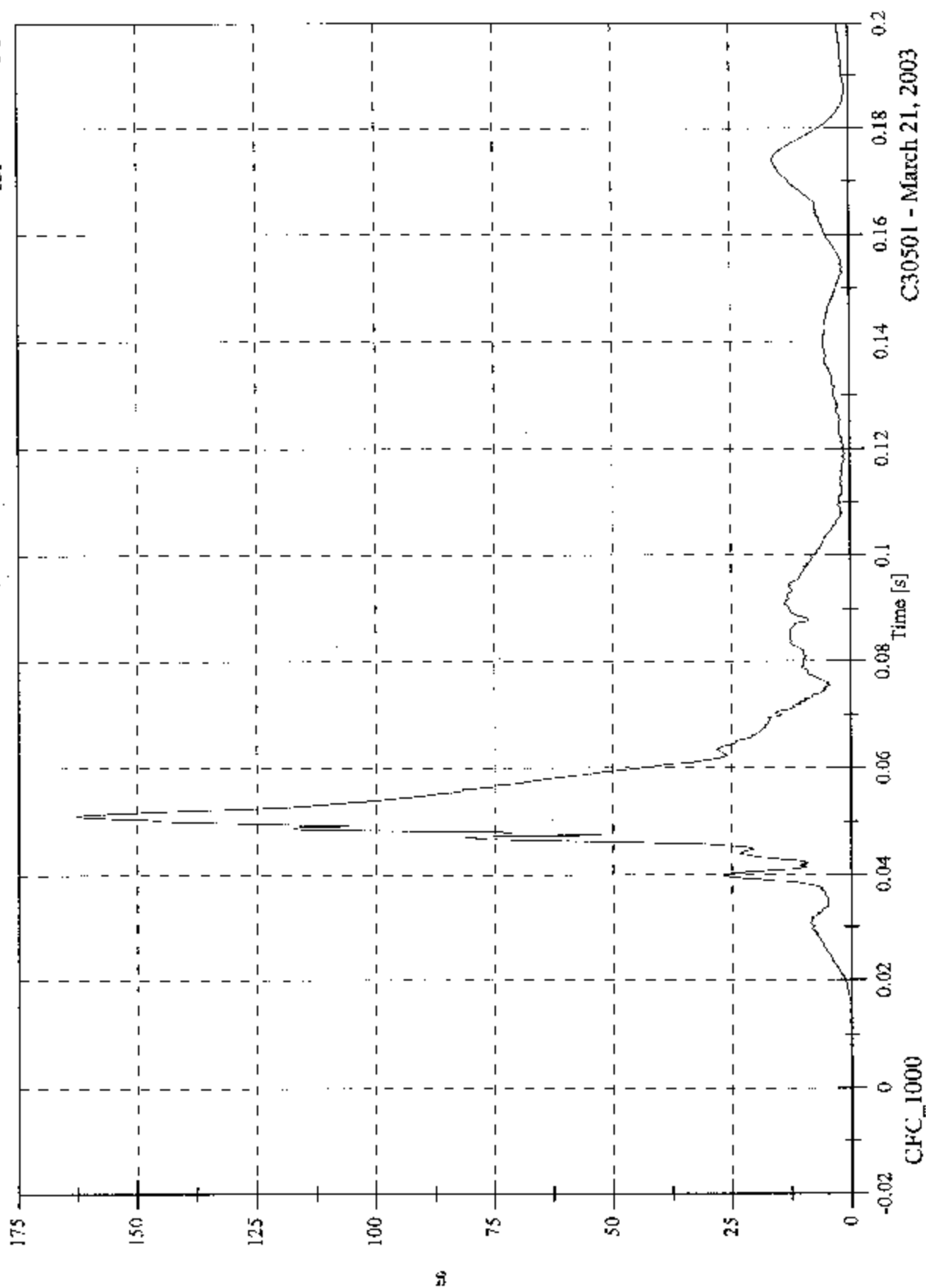


C30501 - March 21, 2003

2003 FMYSS 214D Test 4 2003 Hyundai Accent

Max: 163.0 [g] at 0.051 [s]
Min: 0.0 [g] at -0.013 [s]

V2P4 Head Resultant



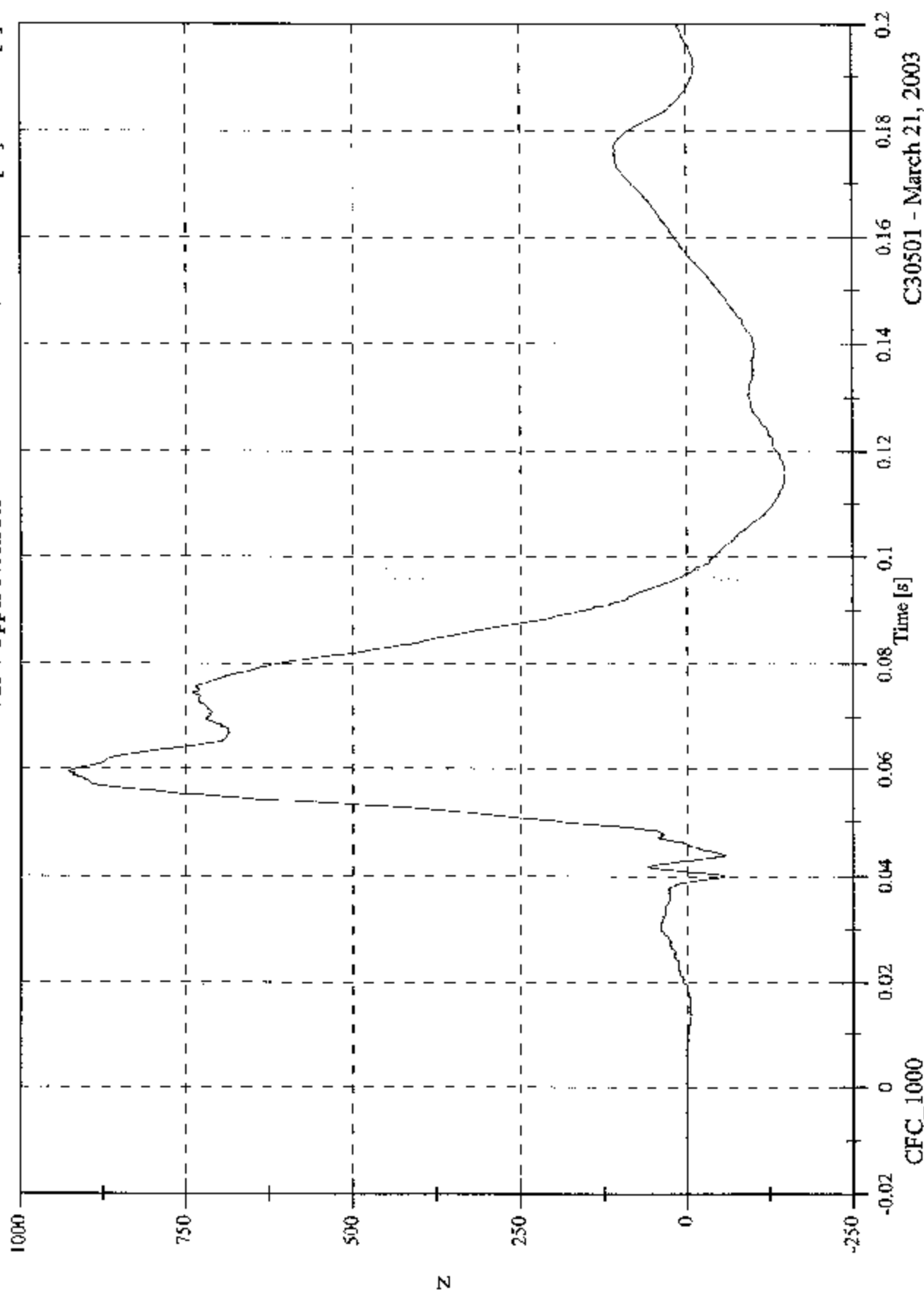
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 928.6 [N] at 0.059 [s]

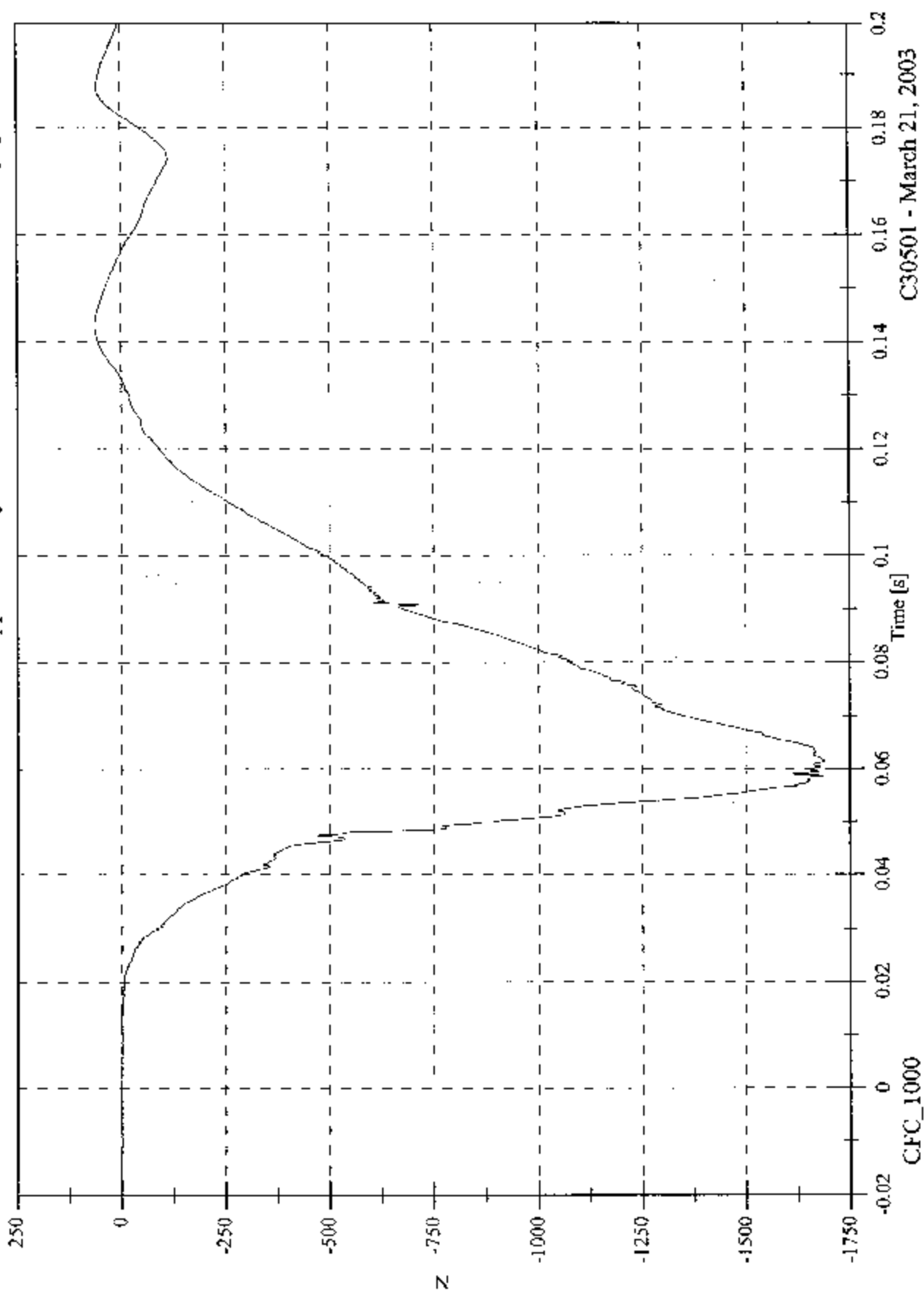
Min: -148.4 [N] at 0.116 [s]

V2P4 Upper Neck Fx



C30501 - March 21, 2003

V2P4 Upper Neck Fy

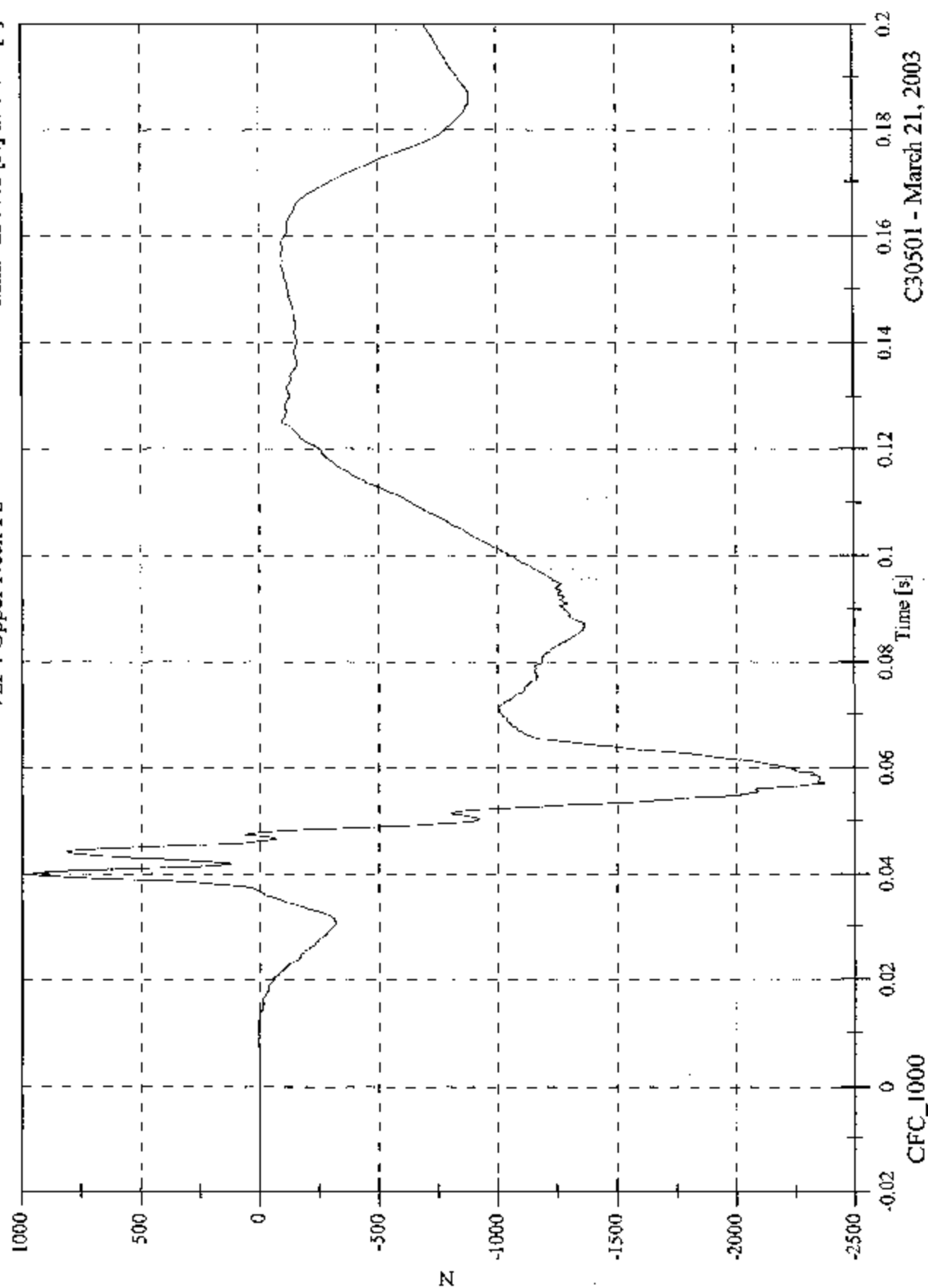


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 956.6 [N] at 0.040 [s]
Min: -2377.1 [N] at 0.057 [s]

V2P4 Upper Neck Fz

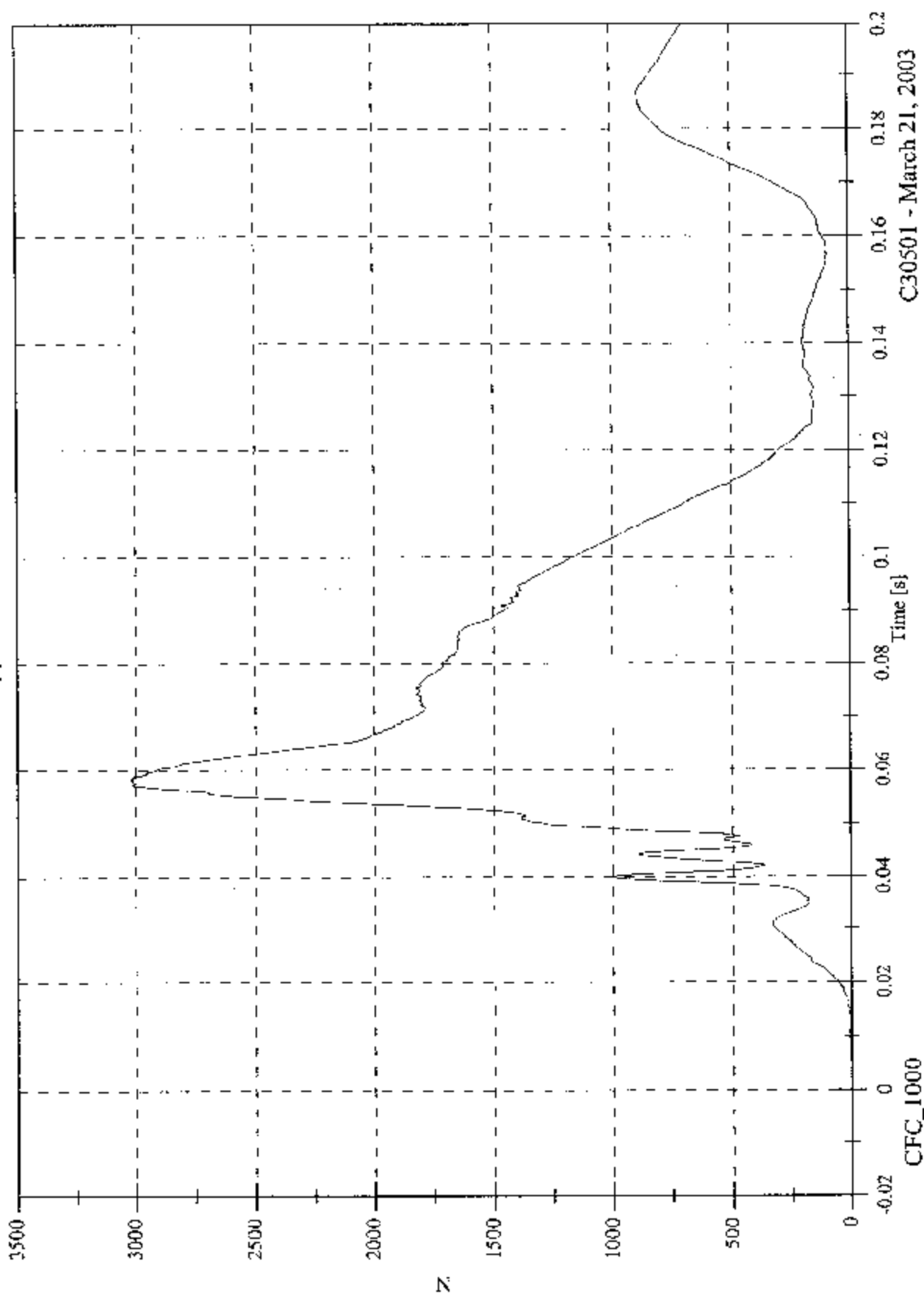


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Upper Neck F Resultant

Max: 3020.0 [N] at 0.057 [s]
Min: 0.1 [N] at -0.008 [s]

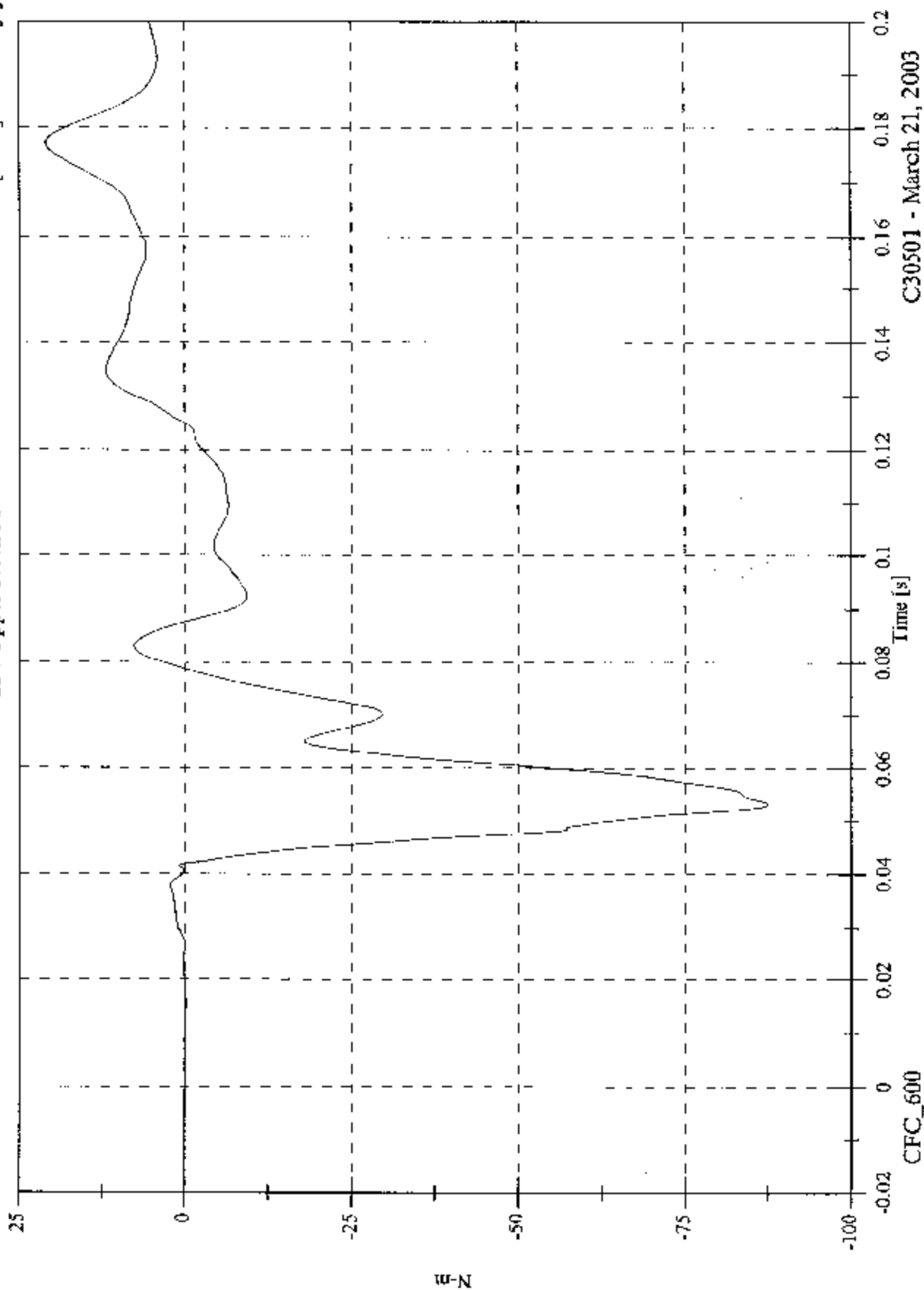


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Upper Neck Mx

Max: 21.0 [N-m] at 0.177 [s]
Min: -87.5 [N-m] at 0.053 [s]

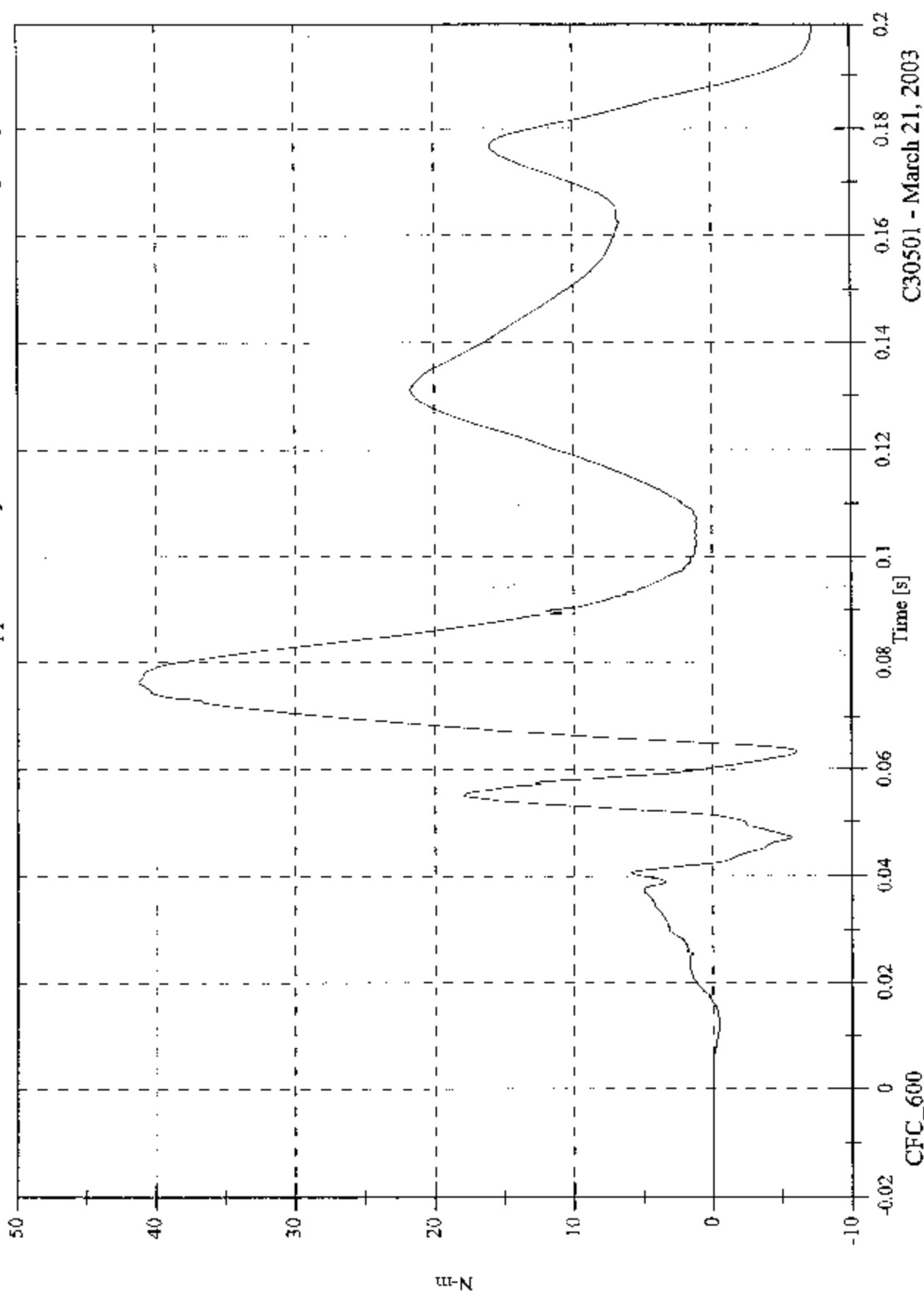


C30501 - March 21, 2003

2003 FMYSS 214D Test 4 2003 Hyundai Accent

V2P4 Upper Neck My

Max: 41.3 [N-m] at 0.076 [s]
Min: -7.3 [N-m] at 0.200 [s]

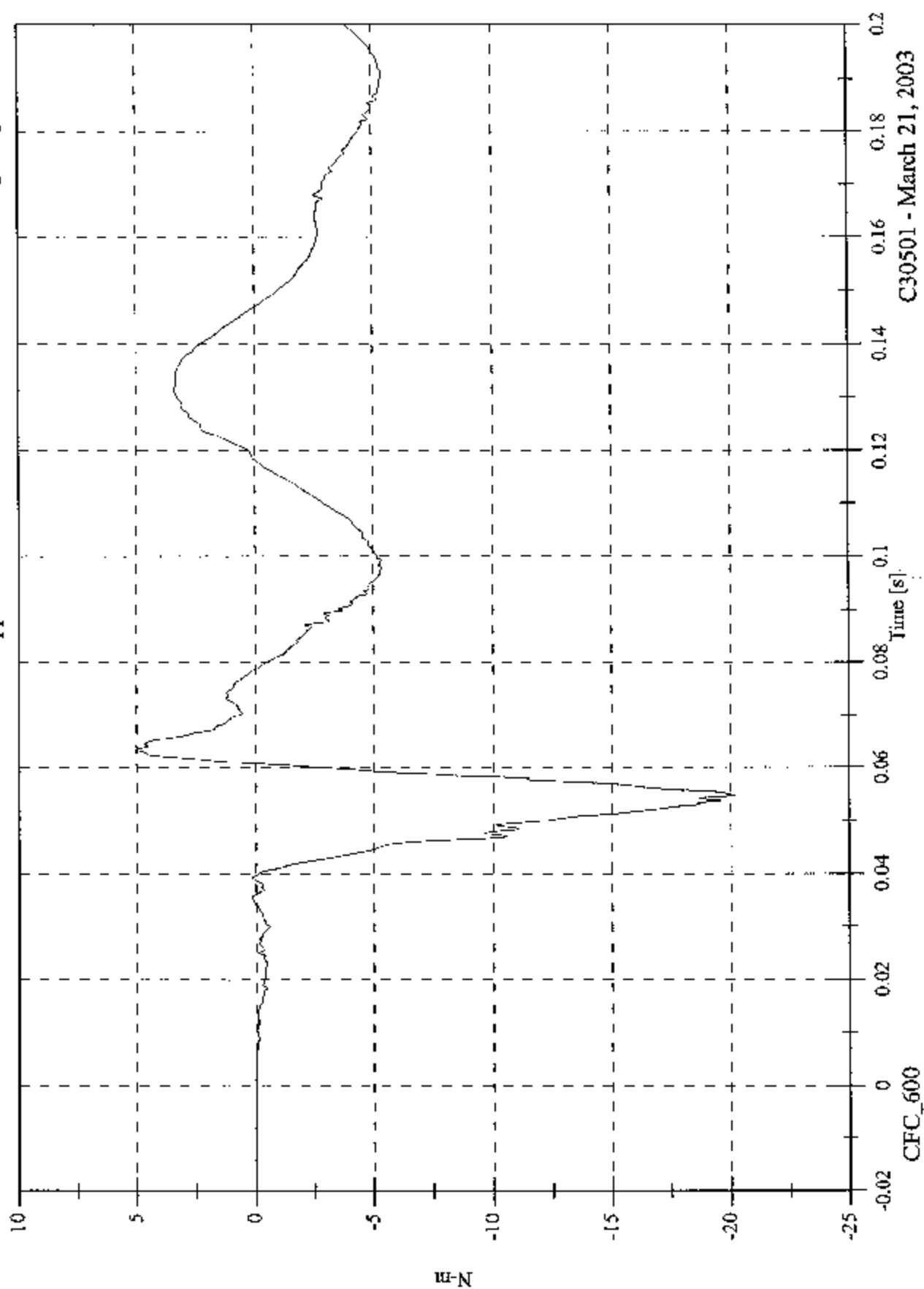


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Upper Neck Mz

Max: 5.0 [N-m] at 0.064 [s]
Min: -20.2 [N-m] at 0.055 [s]



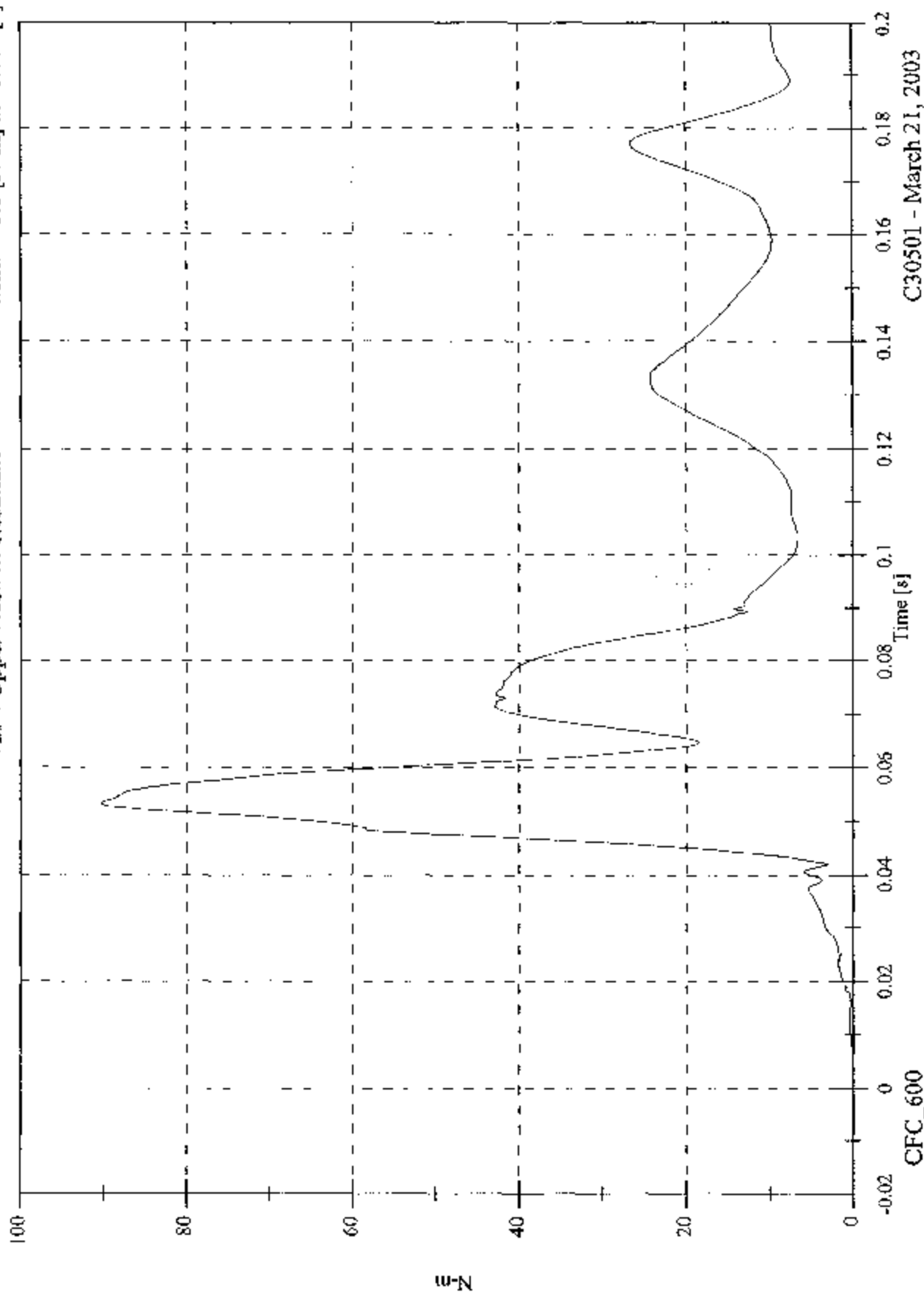
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 90.3 [N-m] at 0.054 [s]

Min: 0.0 [N-m] at -0.017 [s]

V2P4 Upper Neck M Resultant

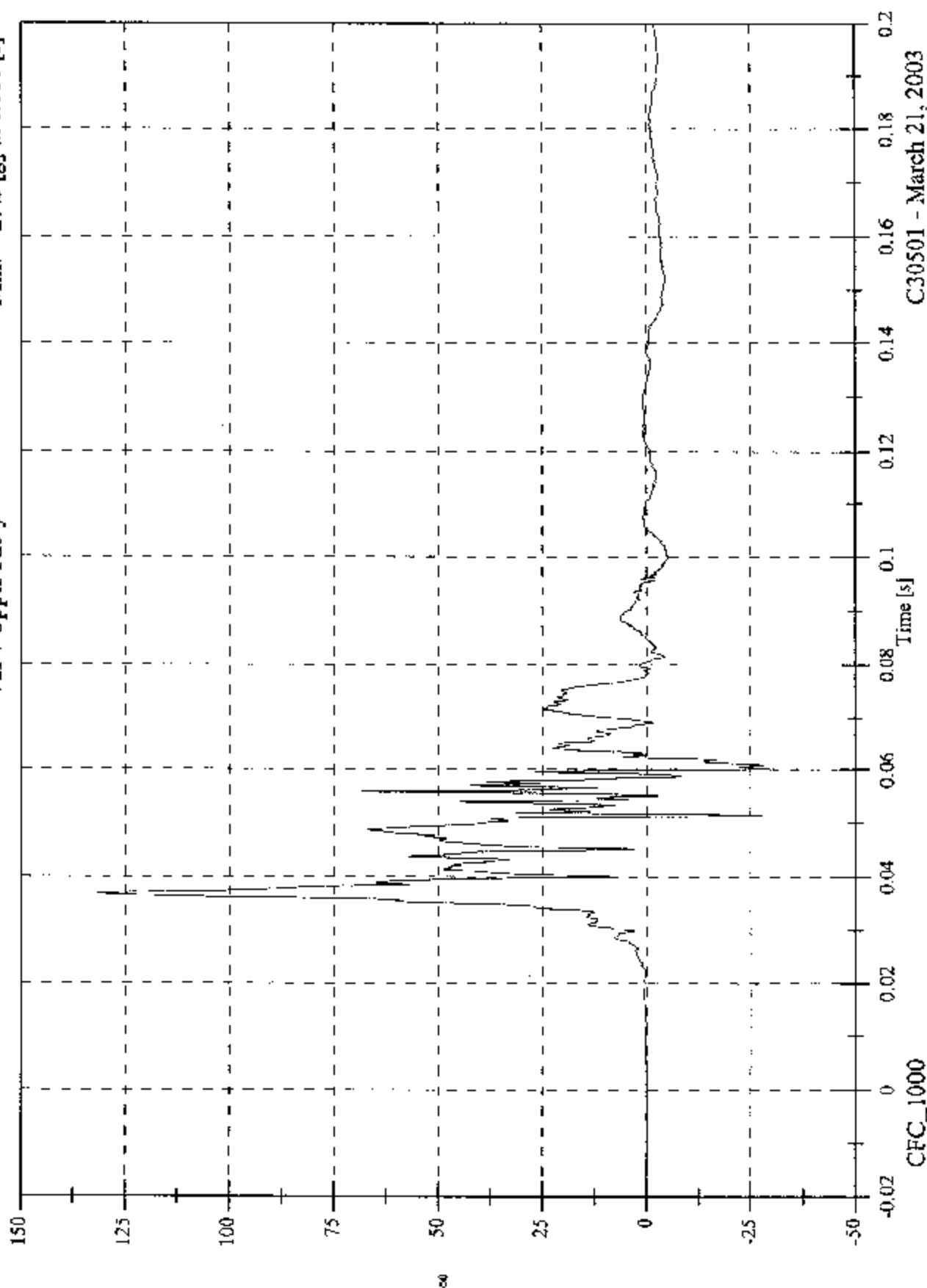


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 131.8 [g] at 0.037 [s]
Min: -29.3 [g] at 0.060 [s]

V2P4 Upper Rib y



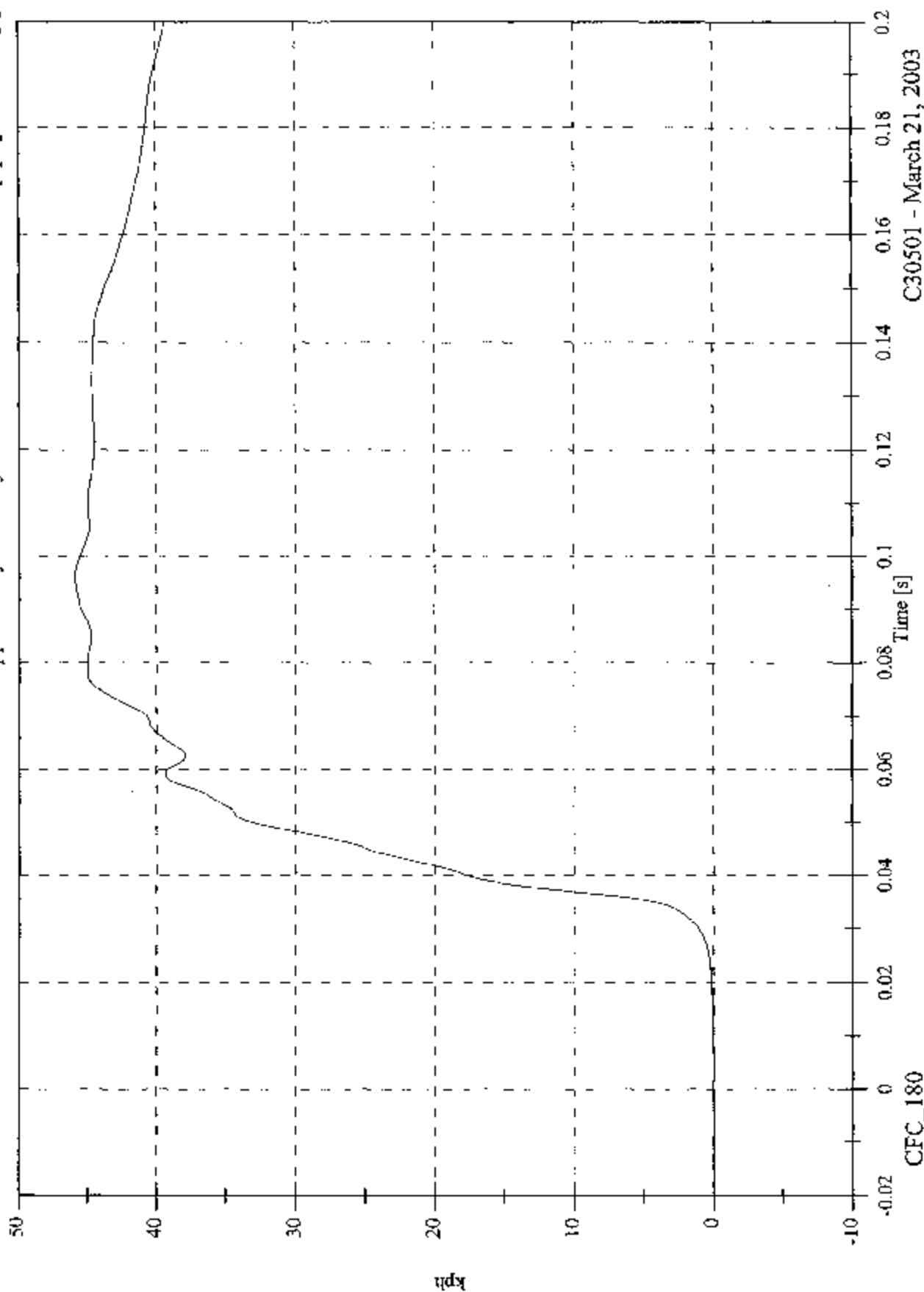
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 45.9 [kph] at 0.096 [s]

Min: -0.0 [kph] at -0.017 [s]

V2P4 Upper Rib y Velocity

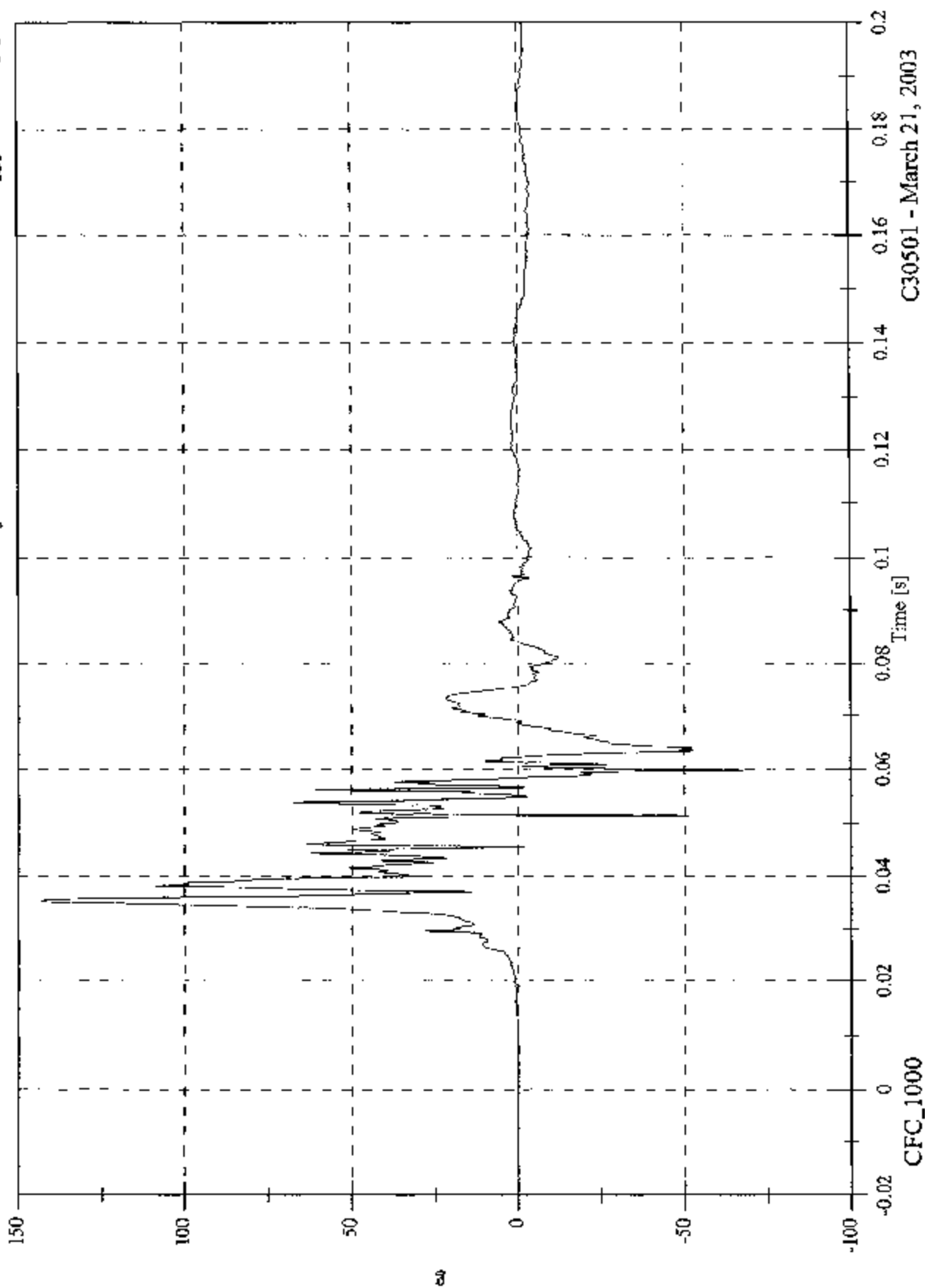


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Lower Rib y

Max: 142.8 [g] at 0.035 [s]
Min: -69.2 [g] at 0.060 [s]

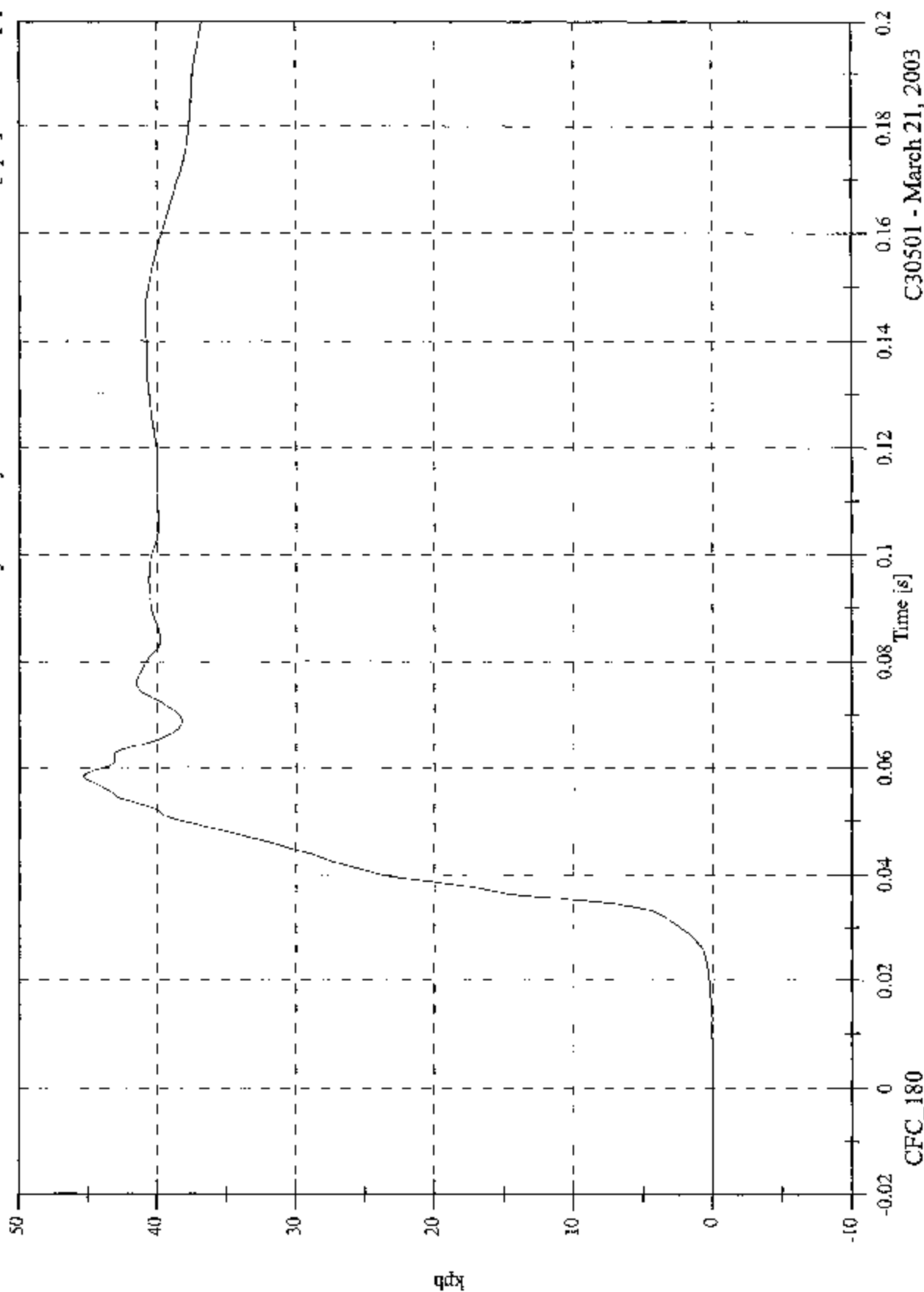


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 45.4 [kph] at 0.058 [s]
Min: -0.0 [kph] at -0.020 [s]

V2P4 Lower Rib y Velocity

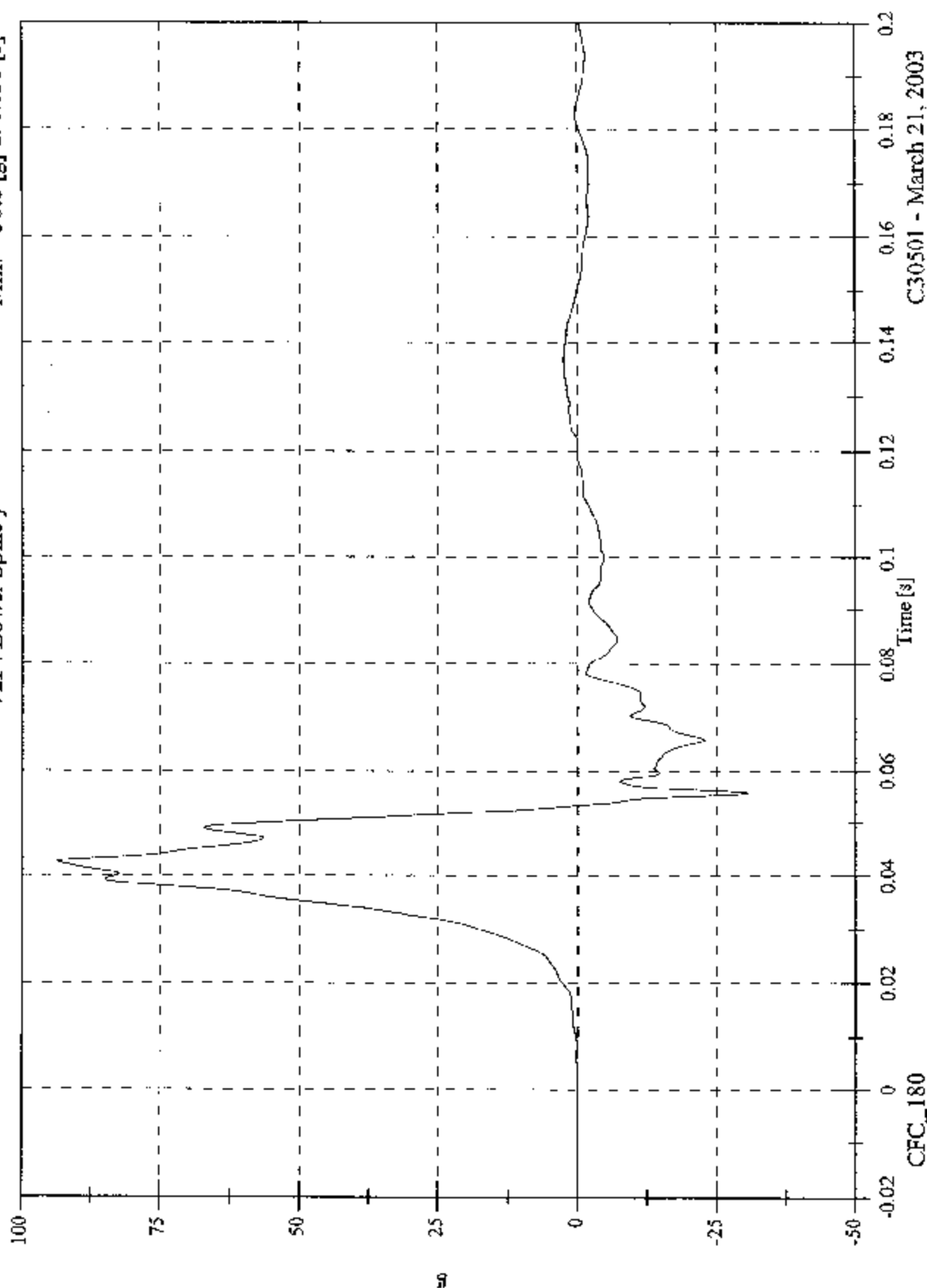


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Lower Spine y

Max: 93.6 [g] at 0.043 [s]
Min: -30.6 [g] at 0.056 [s]

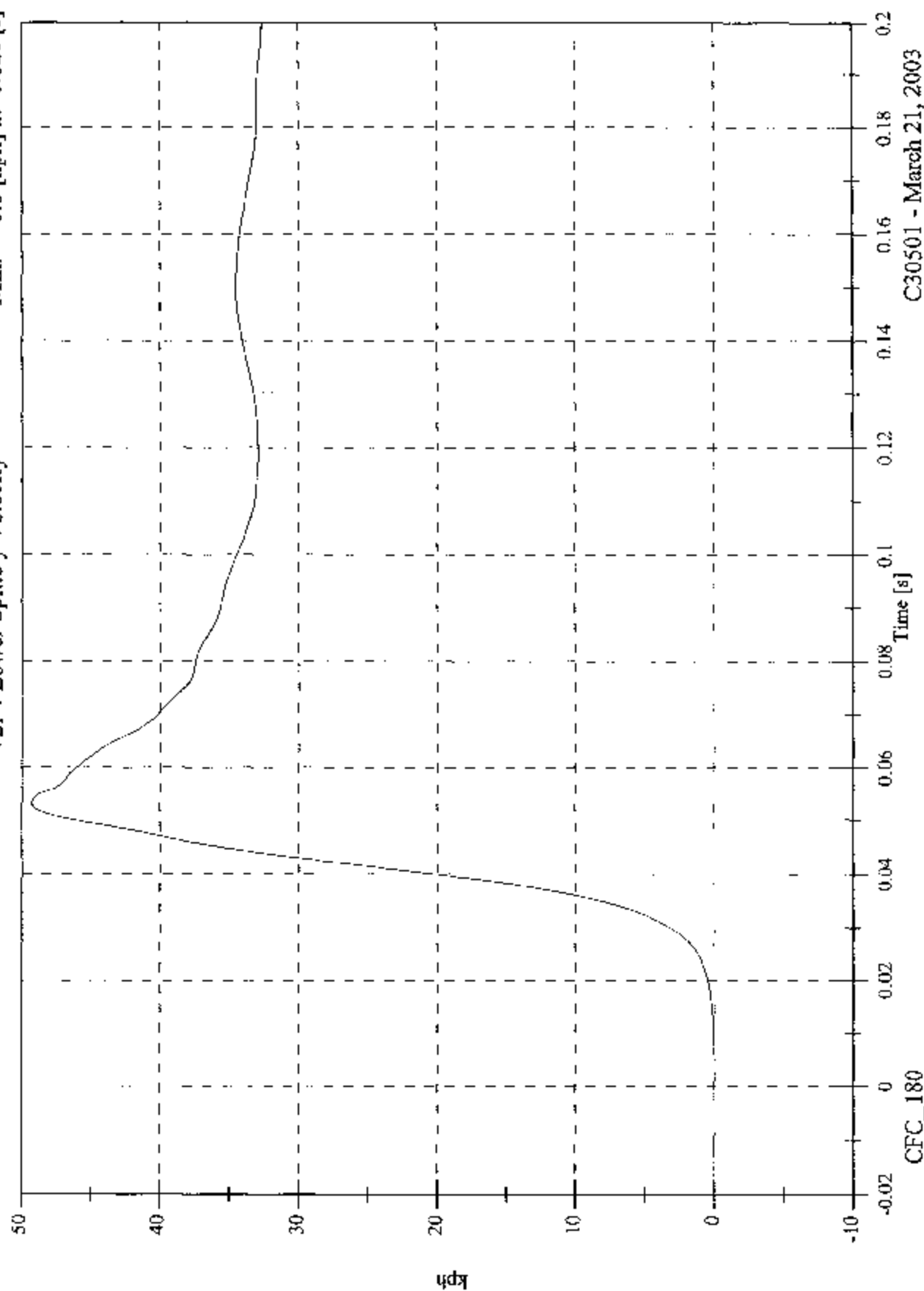


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 49.3 [kph] at 0.053 [s]
Min: -0.0 [kph] at -0.020 [s]

V2P4 Lower Spine y Velocity

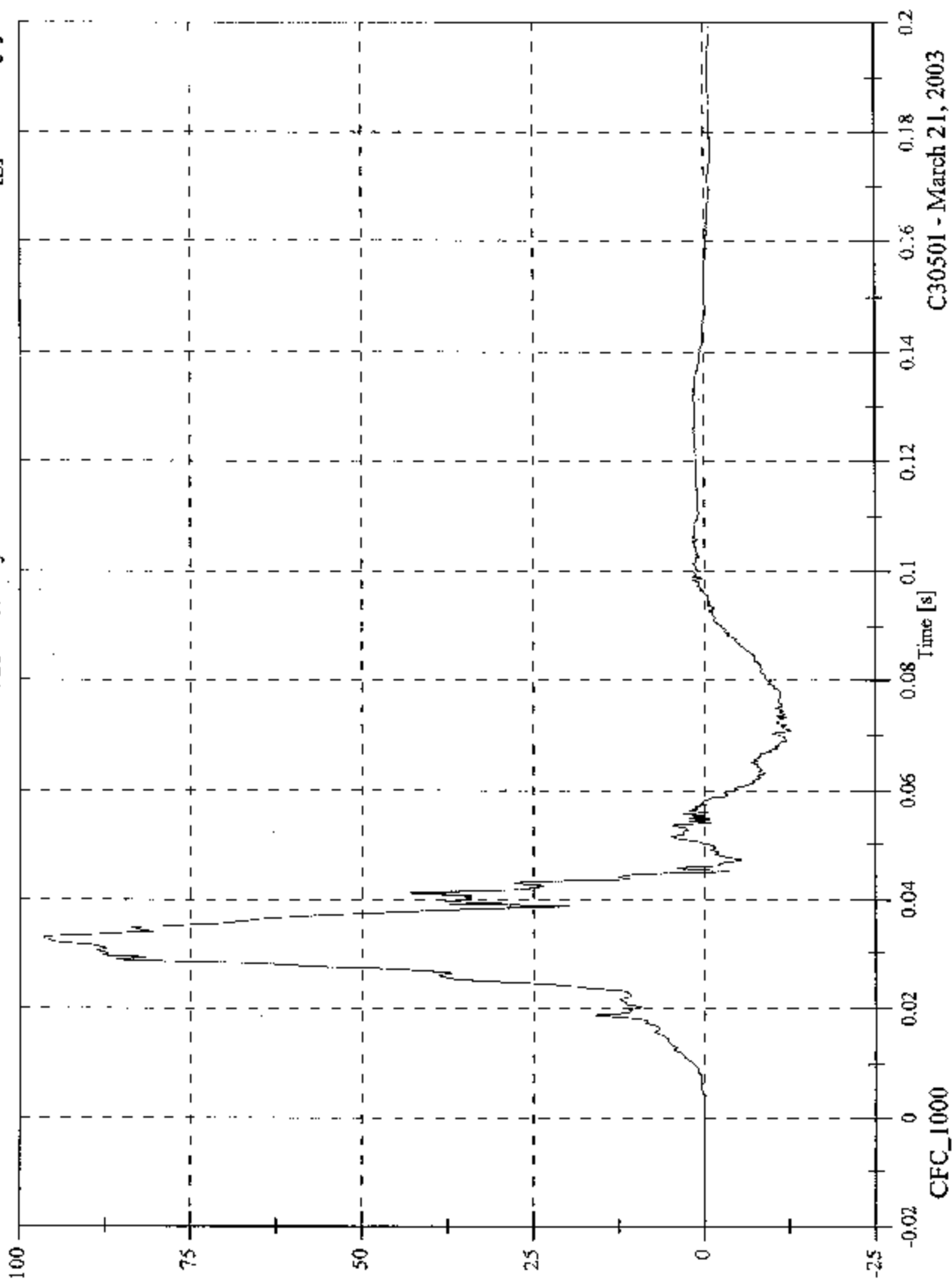


C30501 - March 21, 2003

2003 FNVSS 214D Test 4 2003 Hyundai Accent

Max: 96.5 [g] at 0.033 [s]
Min: -12.6 [g] at 0.071 [s]

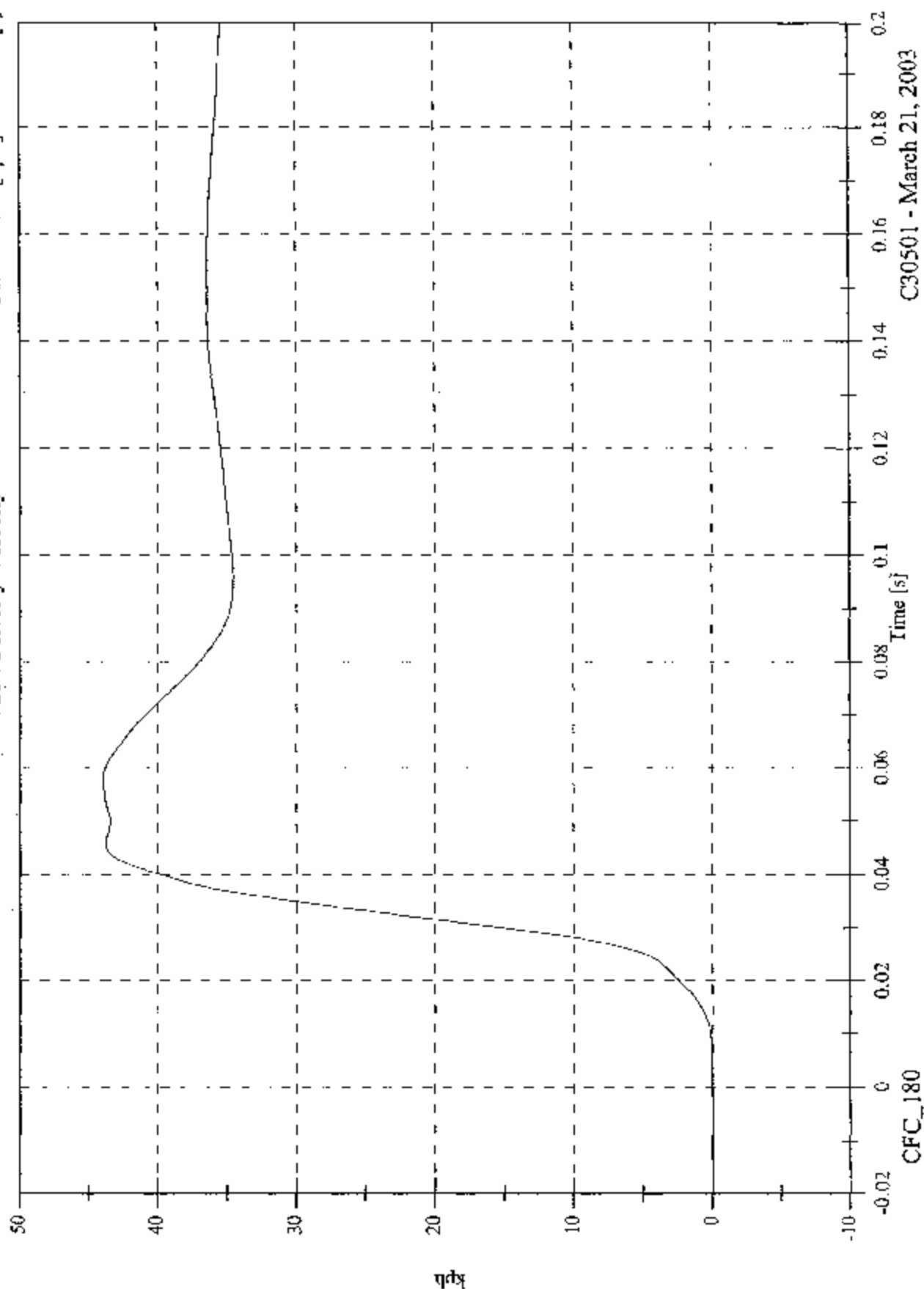
V2P4 Pelvic y



2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 44.0 [kph] at 0.058 [s]
Min: -0.0 [kph] at -0.020 [s]

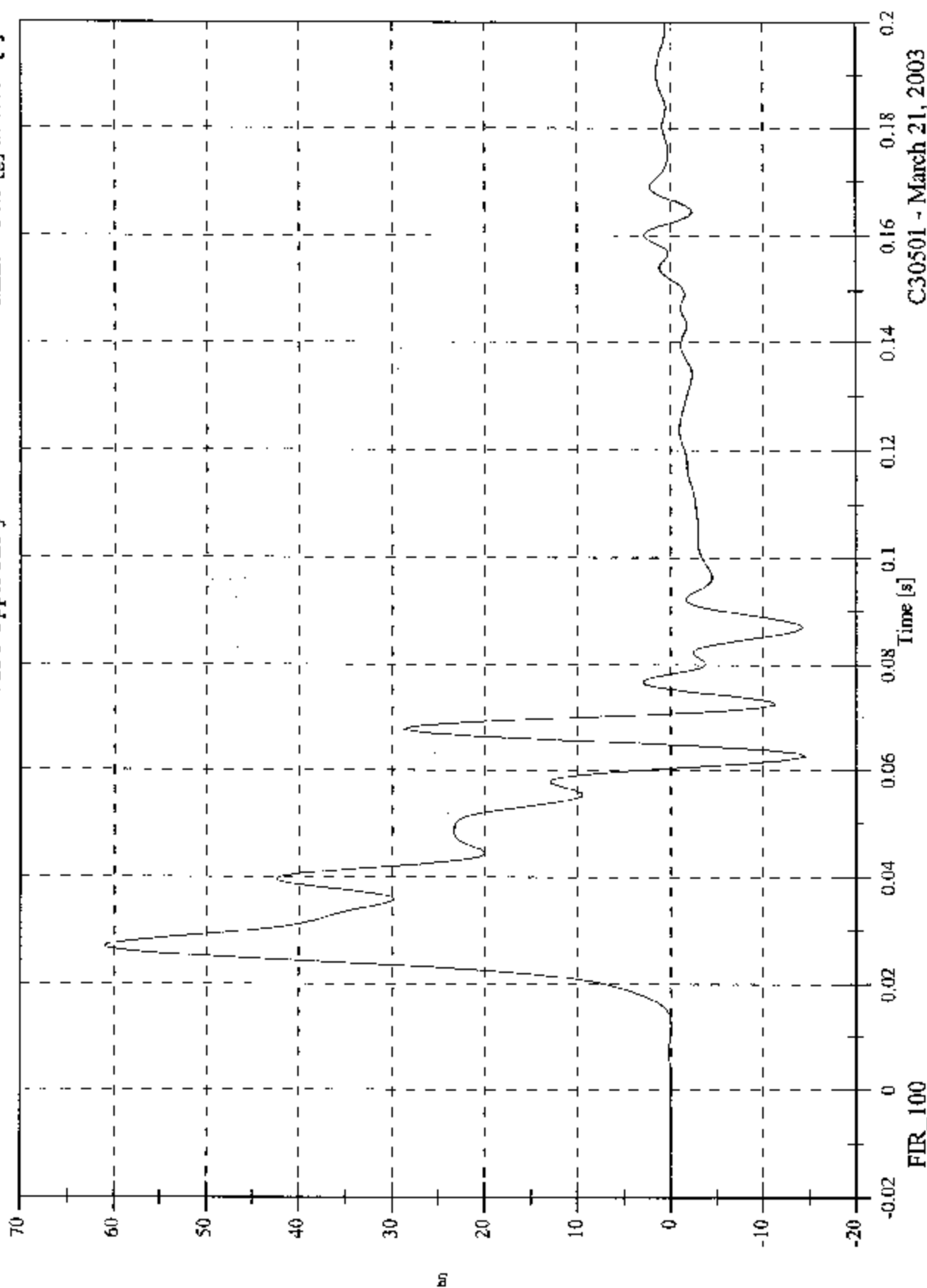
V2P4 Pelvic y Velocity



C30501 - March 21, 2003

Max: 61.0 [g] at 0.027 [s]
Min: -14.5 [g] at 0.062 [s]

V2P1 Upper Rib y



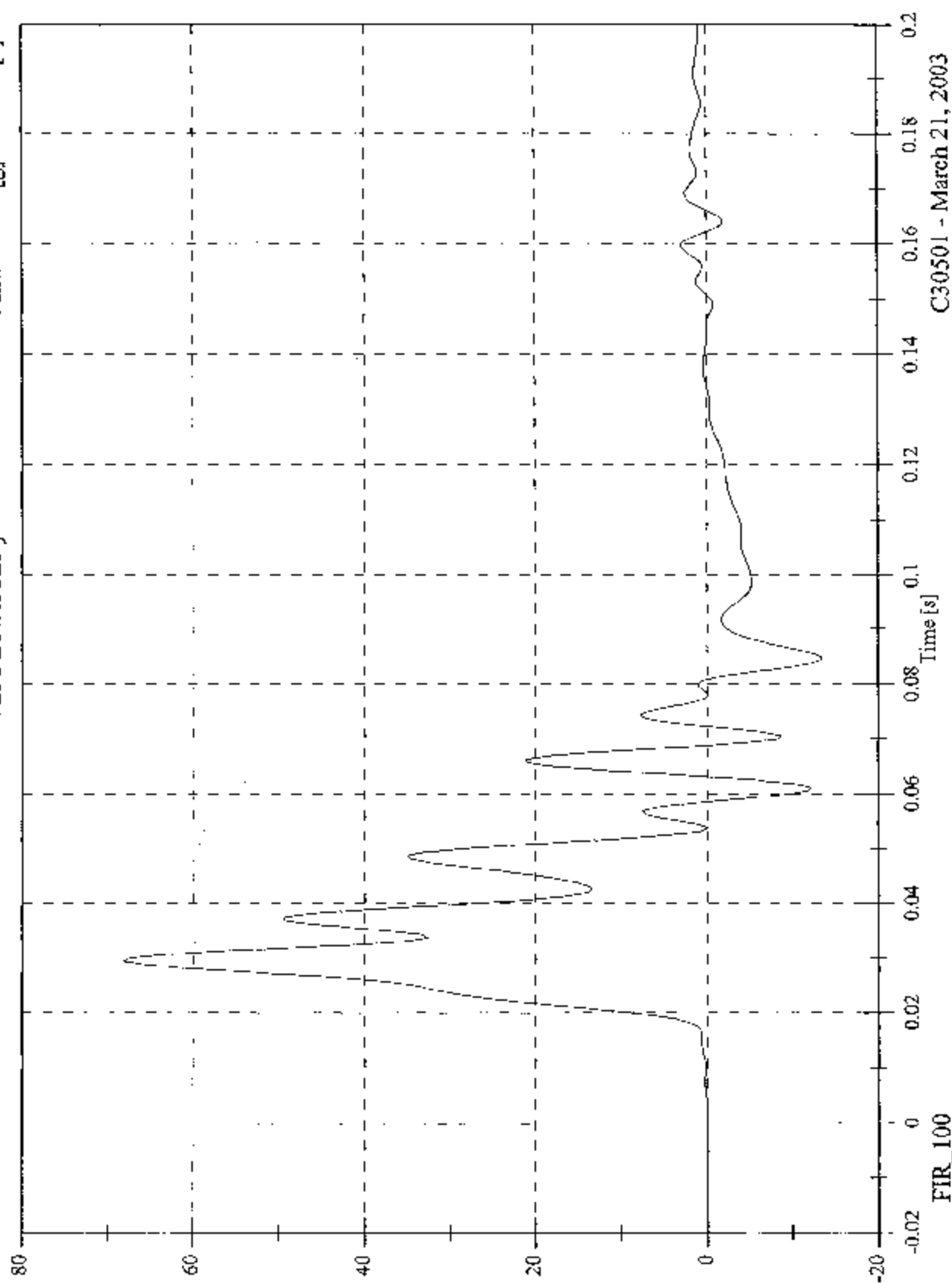
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 68.0 [g] at 0.029 [s]

Min: -13.5 [g] at 0.085 [s]

V2P1 Lower Rib y

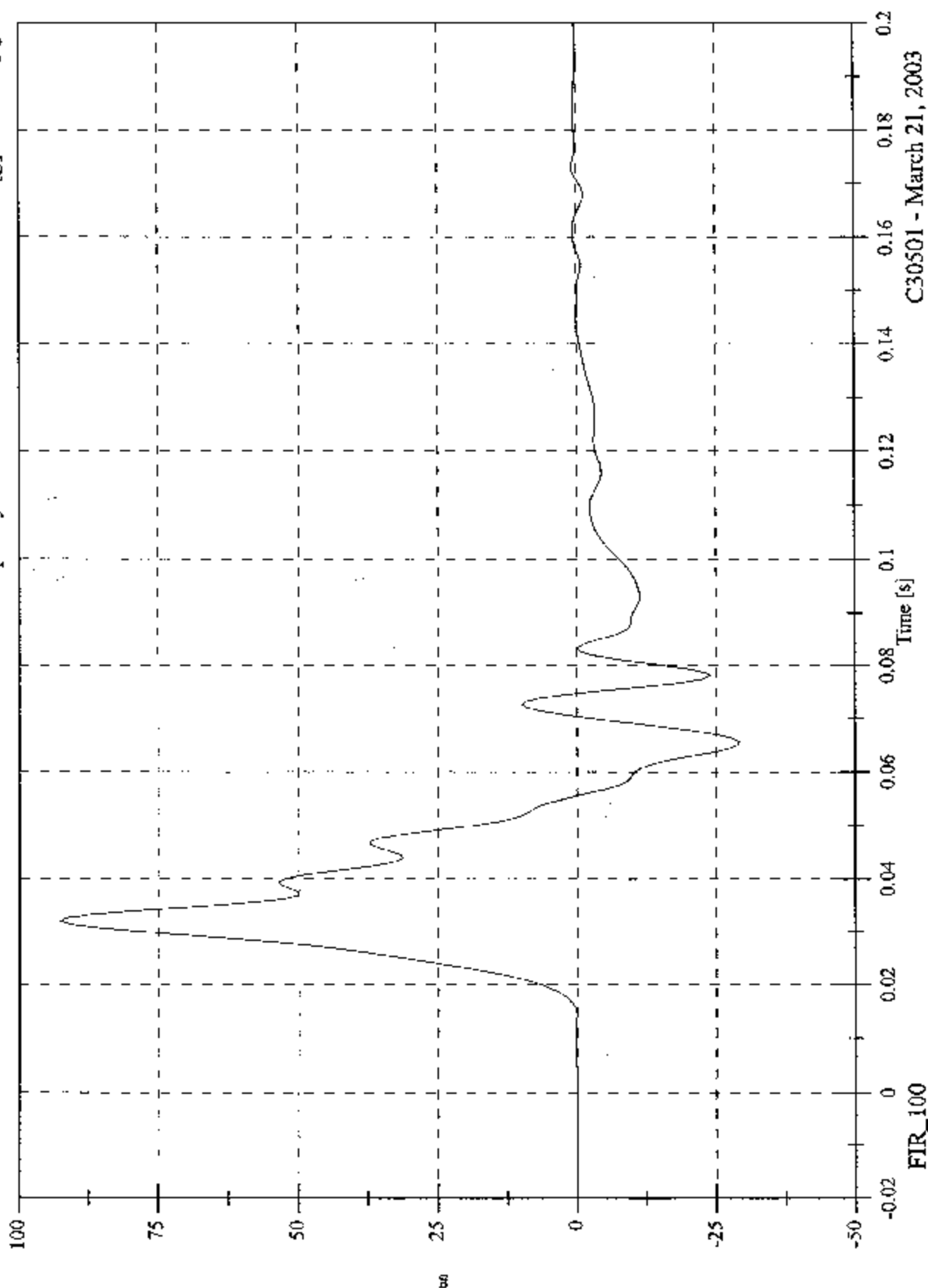


C30501 - March 21, 2003

2003 FMYSS 214D Test 4 2003 Hyundai Accent

V2P1 Lower Spine y

Max: 92.8 [g] at 0.032 [s]
Min: -29.1 [g] at 0.066 [s]

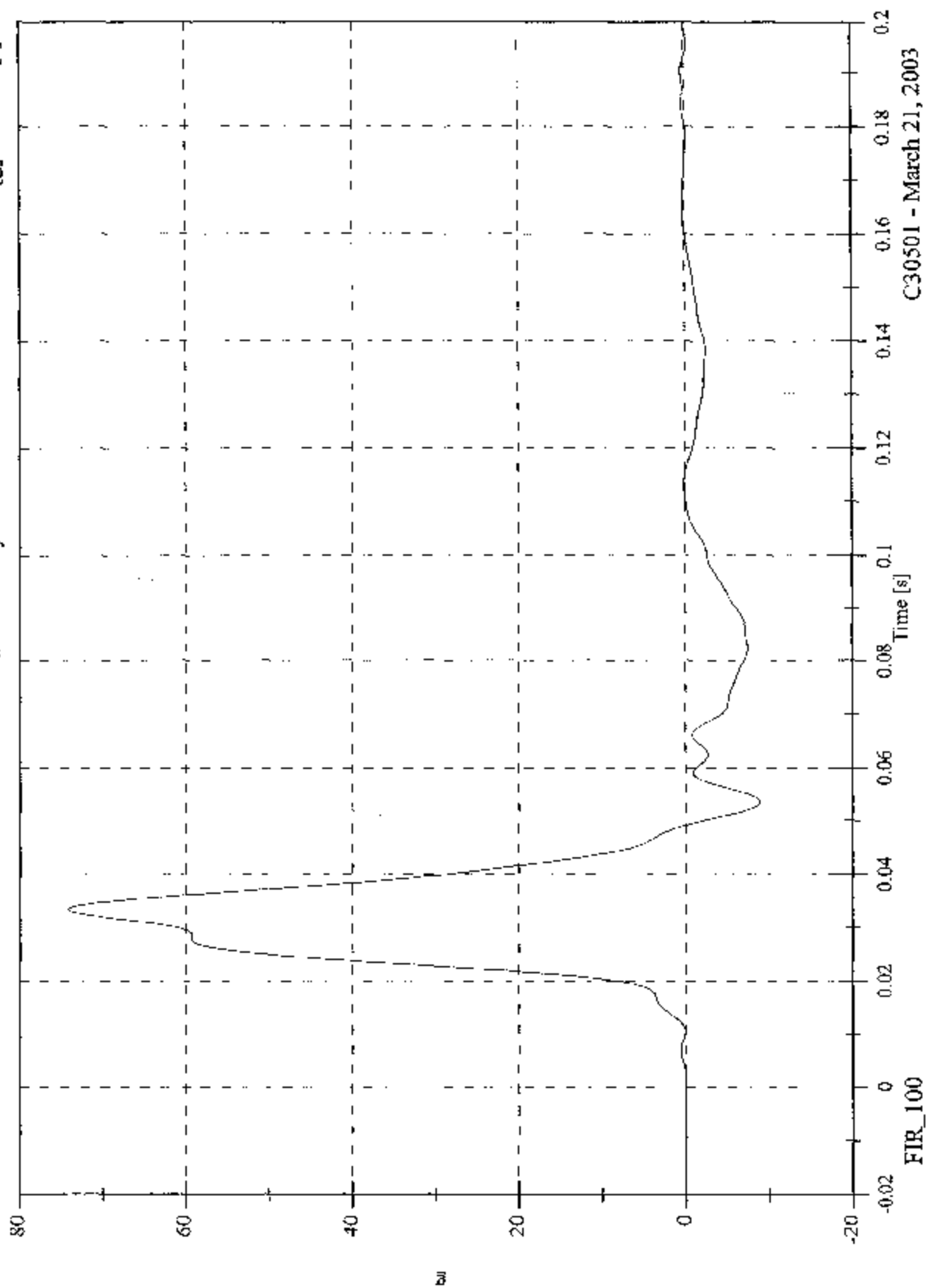


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 74.3 [g] at 0.034 [s]
Min: -8.9 [g] at 0.054 [s]

V2P1 Pelvic y

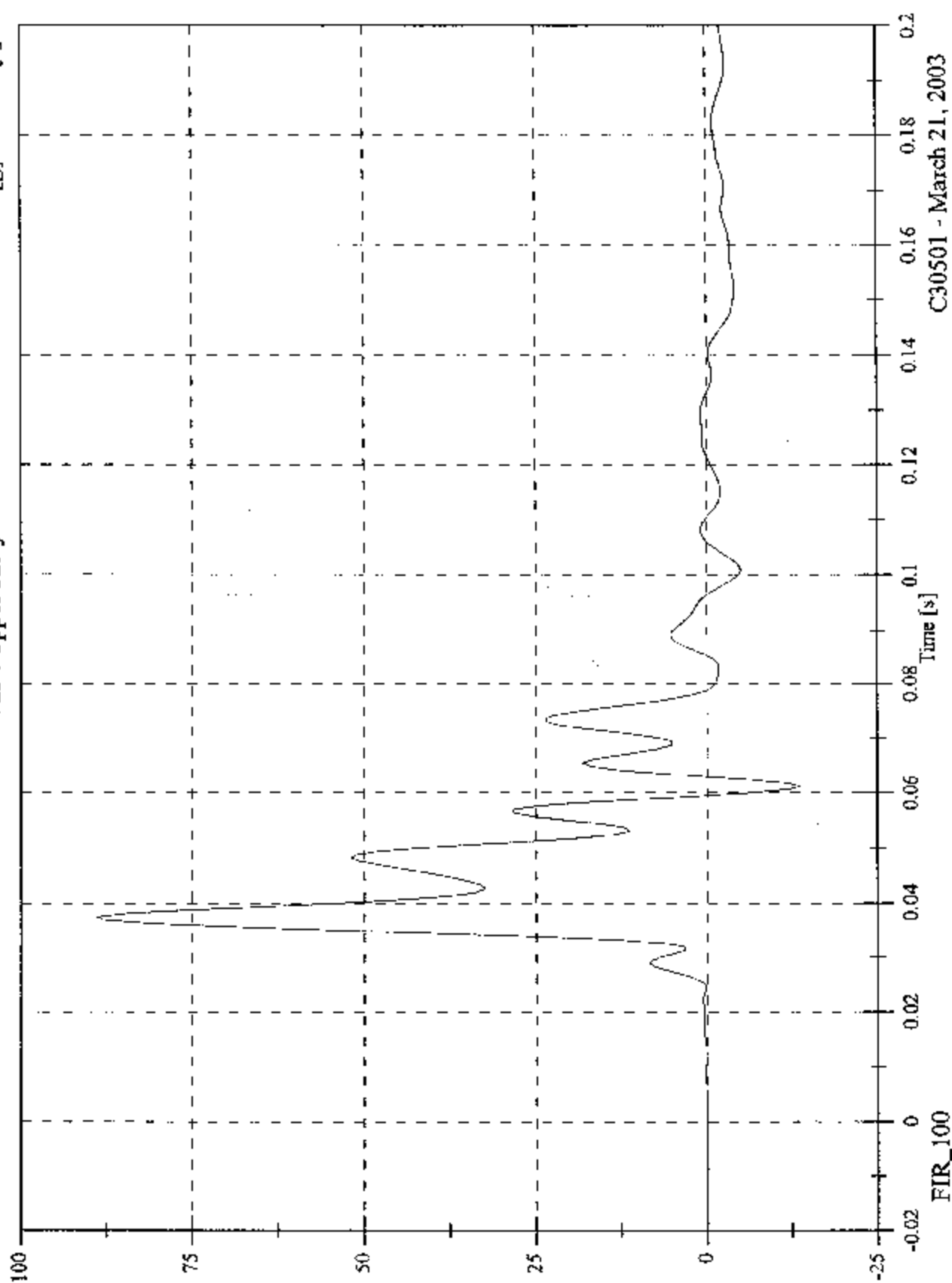


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Upper Rib y

Max: 88.9 [g] at 0.037 [s]
Min: -13.6 [g] at 0.061 [s]

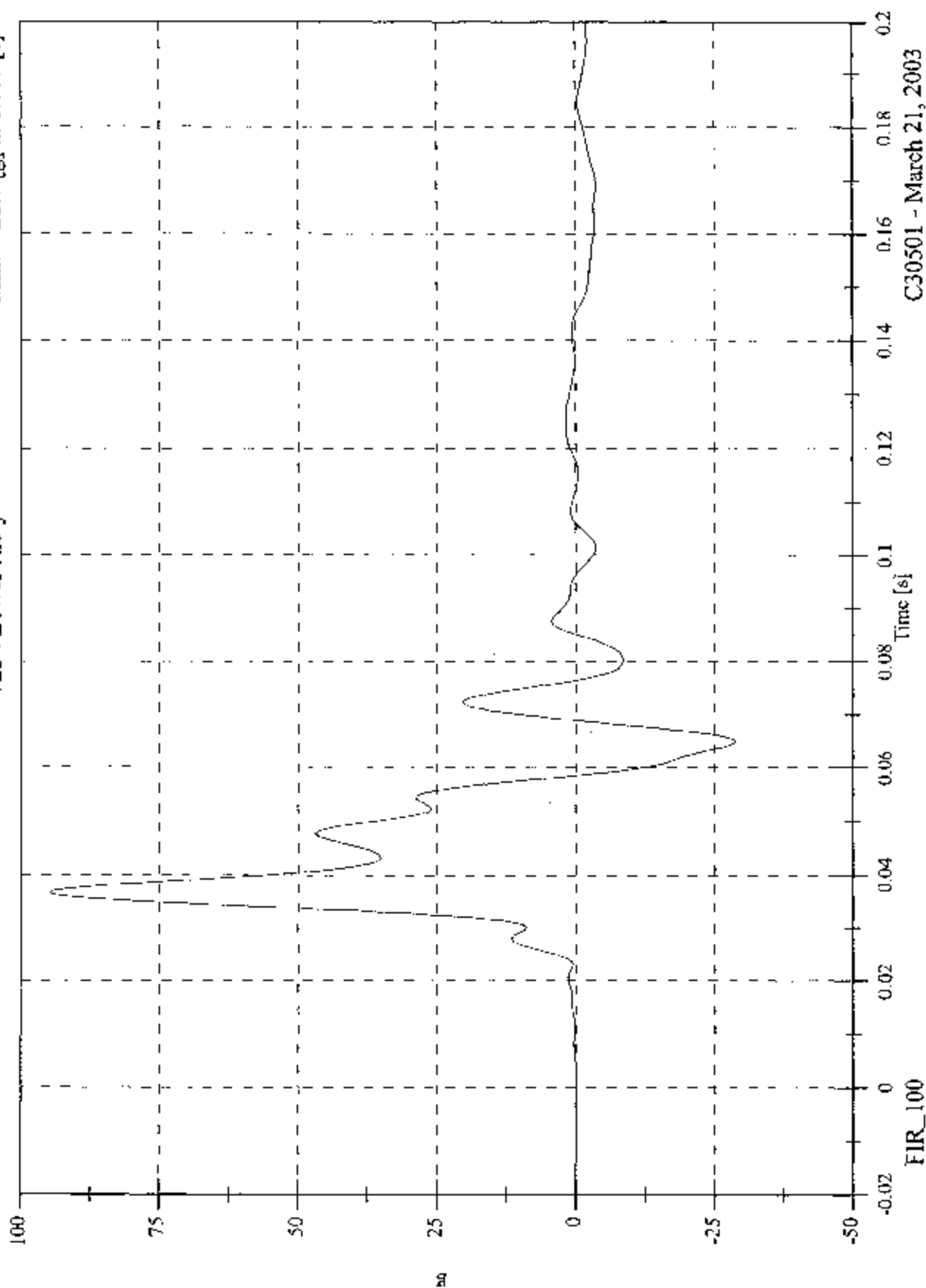


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Lower Rib y

Max: 94.7 [g] at 0.036 [s]
Min: -28.7 [g] at 0.065 [s]

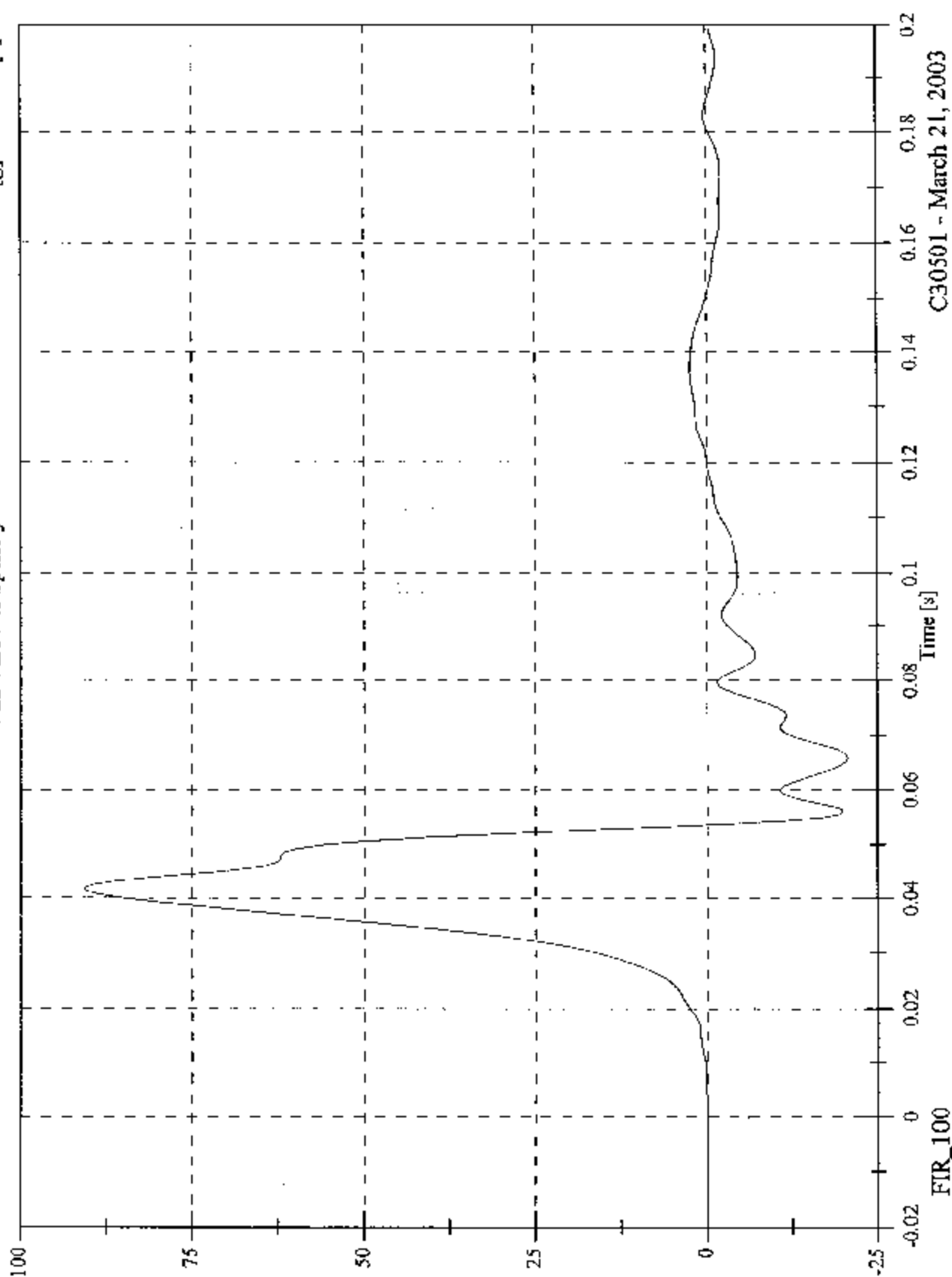


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Lower Spine y

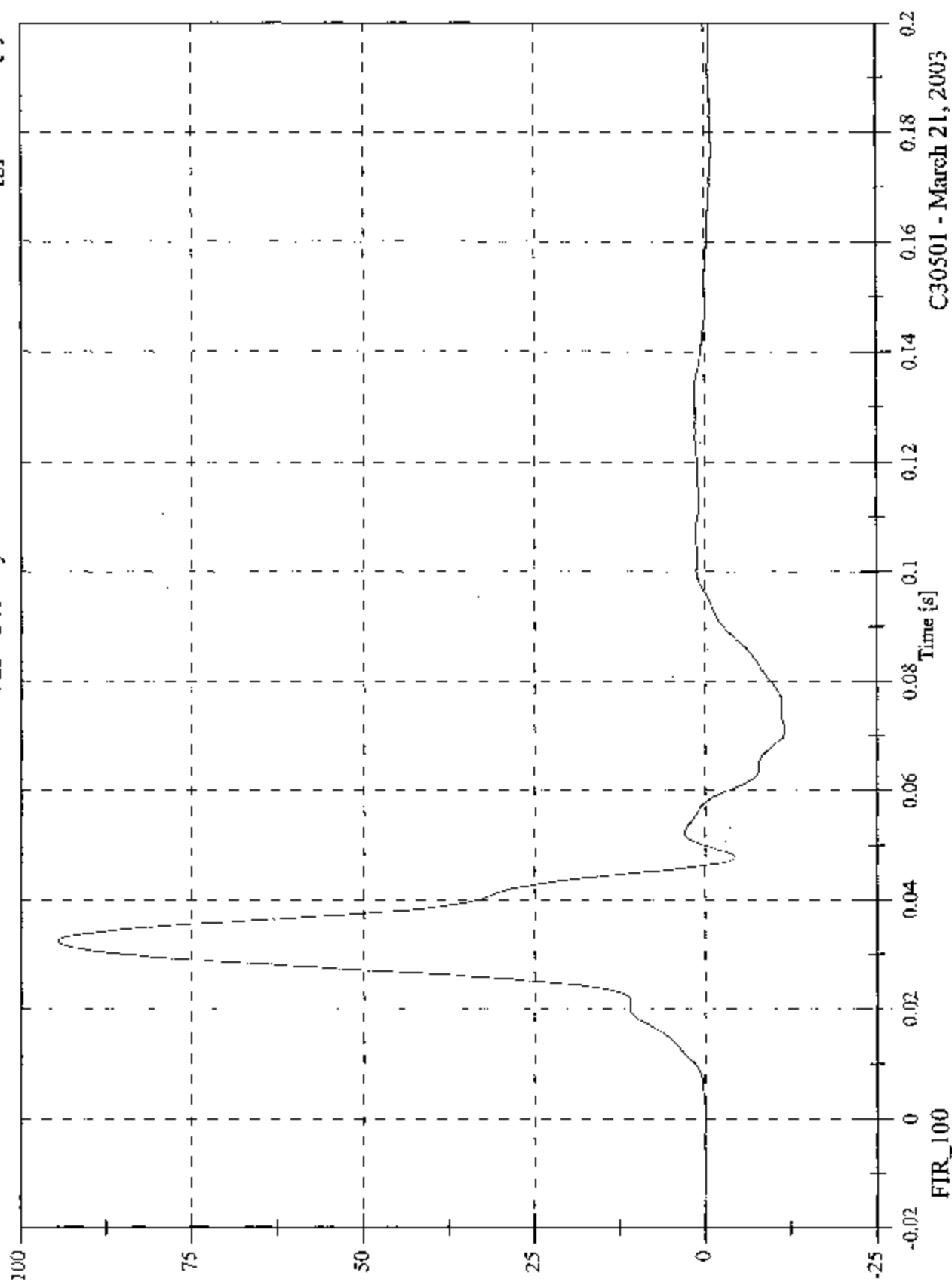
Max: 90.8 [g] at 0.042 [s]
Min: -20.6 [g] at 0.066 [s]



2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 94.6 [g] at 0.032 [s]
Min: -11.7 [g] at 0.071 [s]

V2P4 Pelvic y

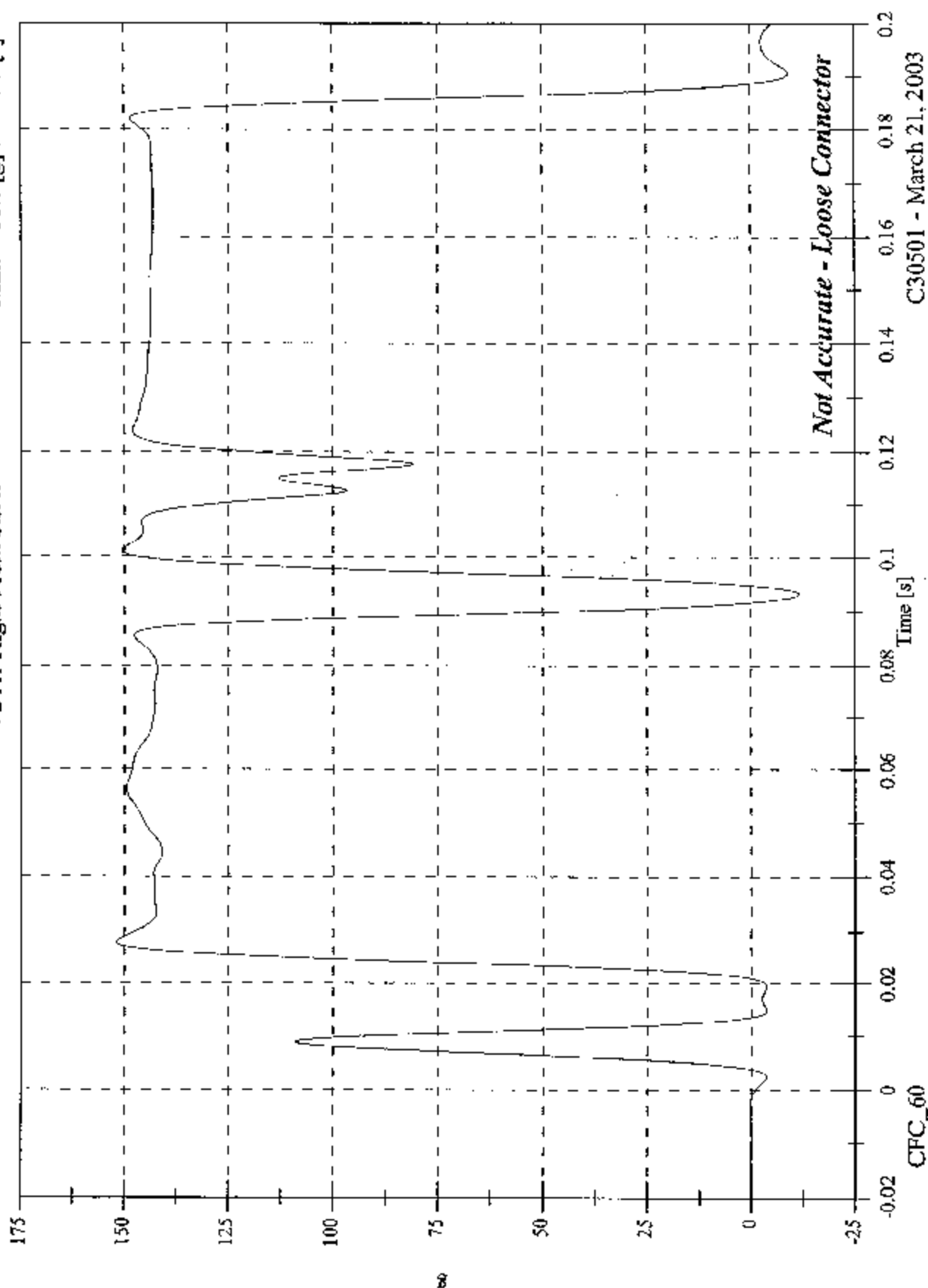


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A1 Right Front Sill x

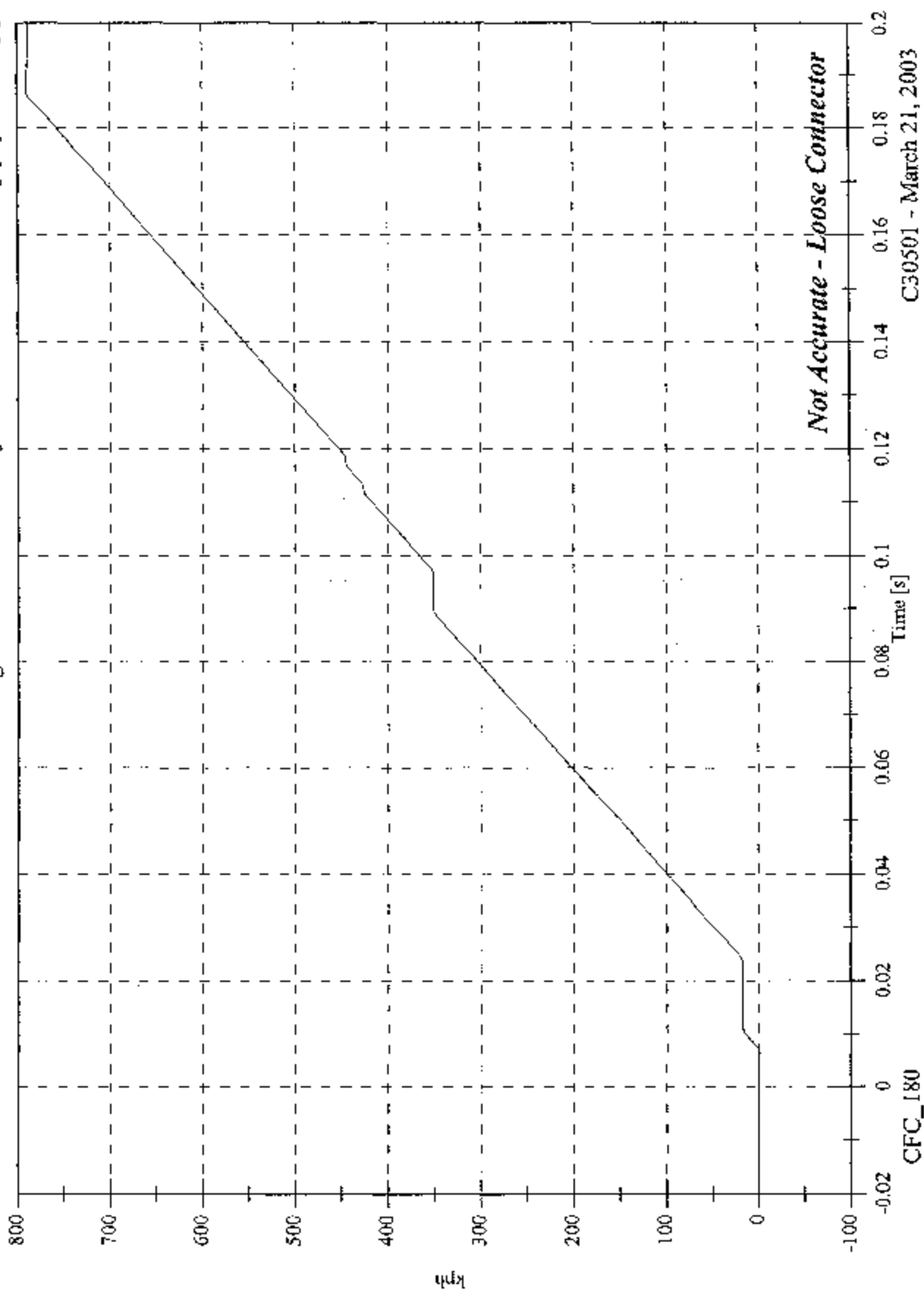
Max: 152.0 [g] at 0.028 [s]
Min: -11.6 [g] at 0.093 [s]



2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A1 Right Front Sill x Velocity

Max: 790.0 [kph] at 0.187 [s]
Min: -0.2 [kph] at 0.006 [s]



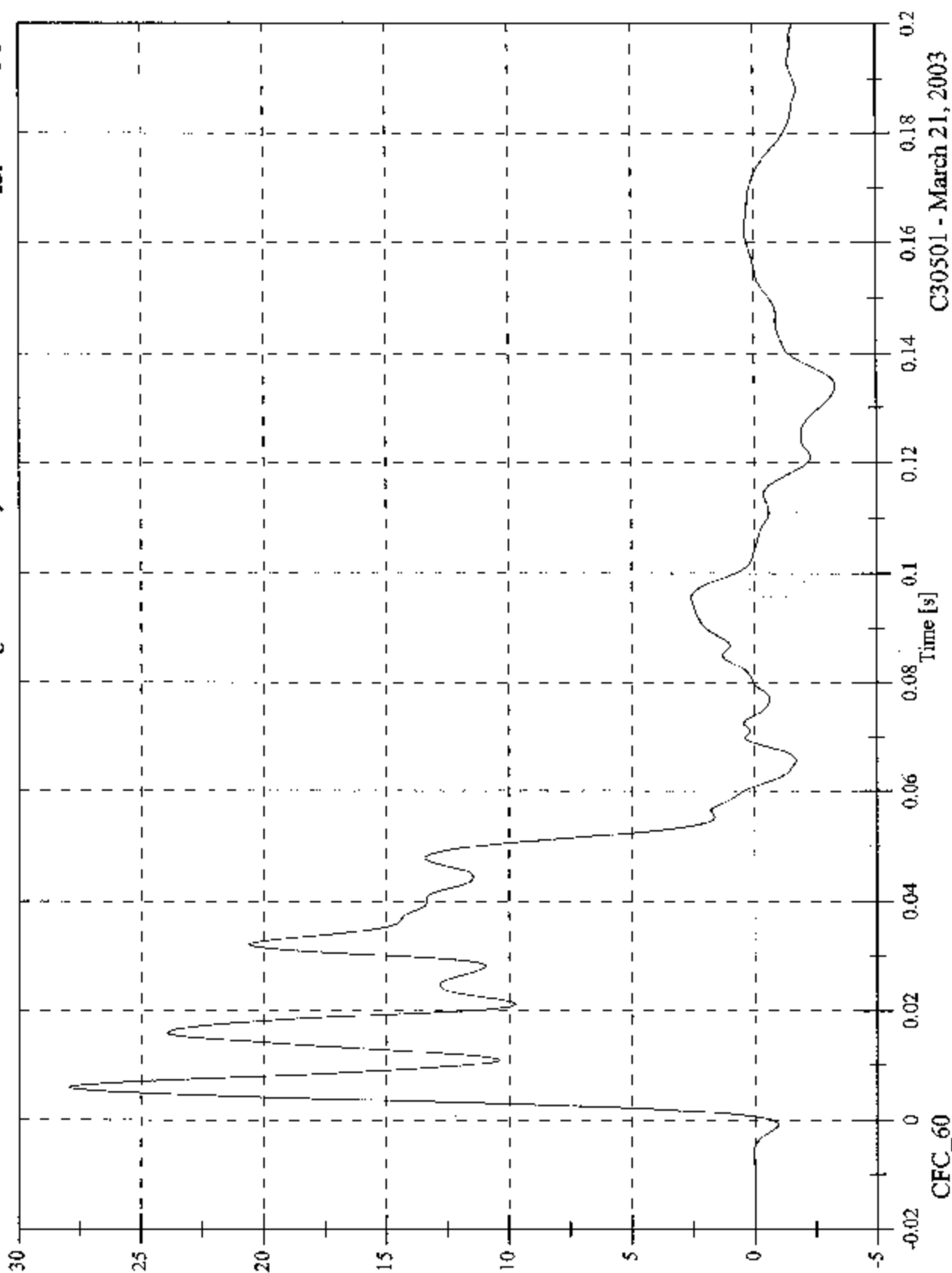
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A1 Right Front Sill y

Max: 28.0 [g] at 0.006 [s]
Min: -3.3 [g] at 0.134 [s]



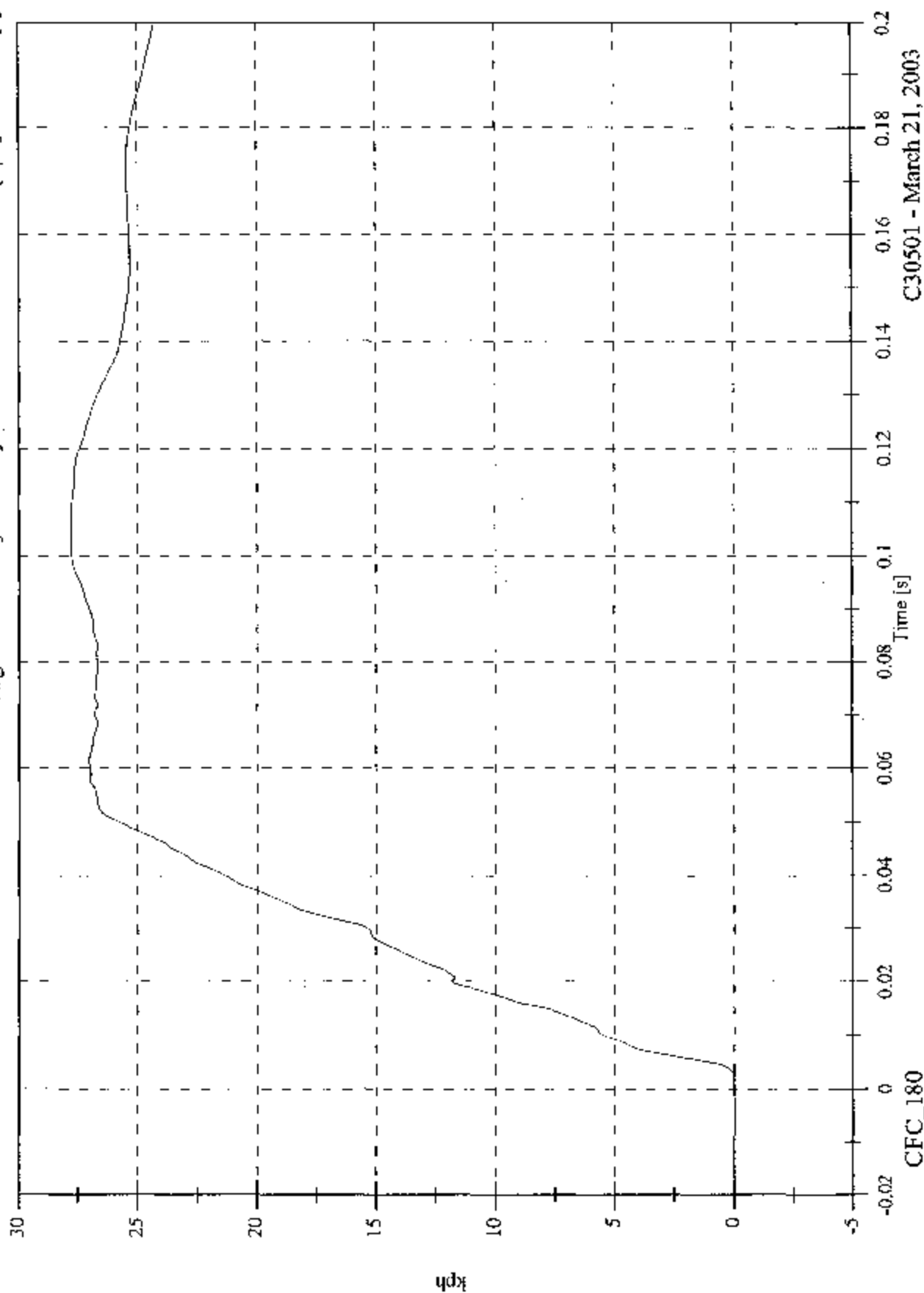
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 27.8 [kph] at 0.104 [s]

Min: -0.0 [kph] at -0.018 [s]

V2 A1 Right Front Sill y Velocity

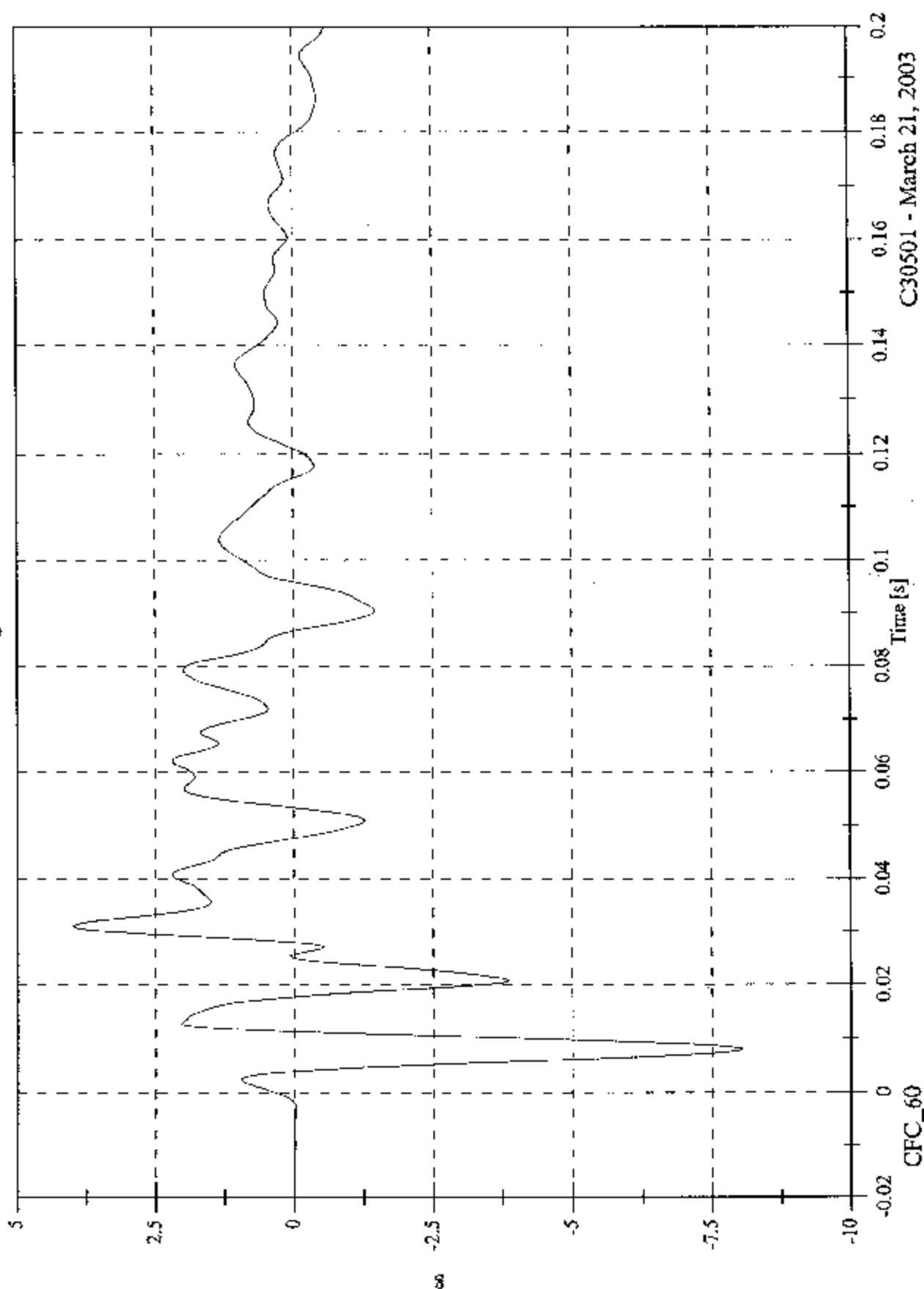


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 4.0 [g] at 0.031 [s]
Min: -8.1 [g] at 0.008 [s]

V2 A1 Right Front Sill z

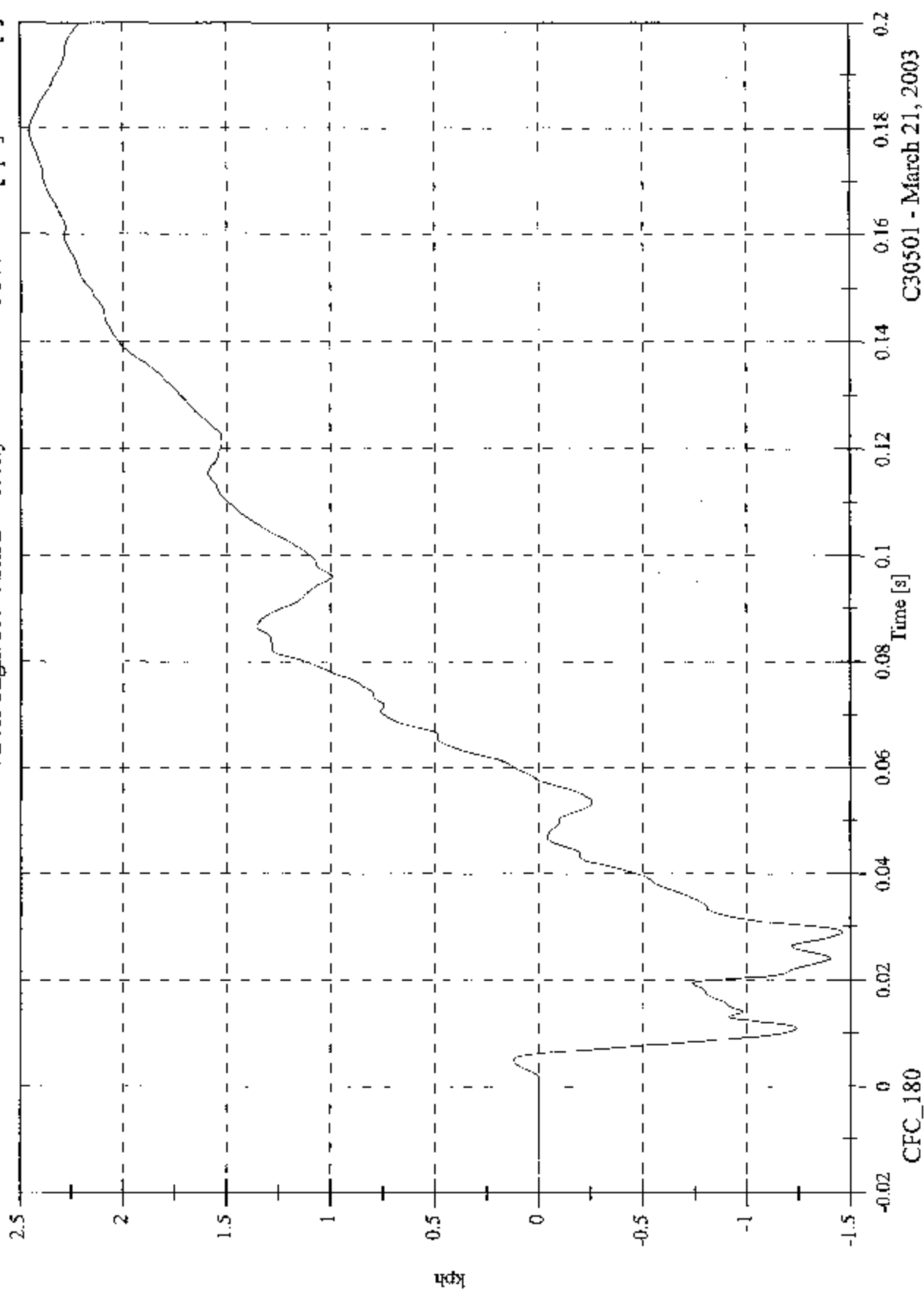


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A1 Right Front Sill z Velocity

Max: 2.5 [kph] at 0.179 [s]
Min: -1.5 [kph] at 0.029 [s]

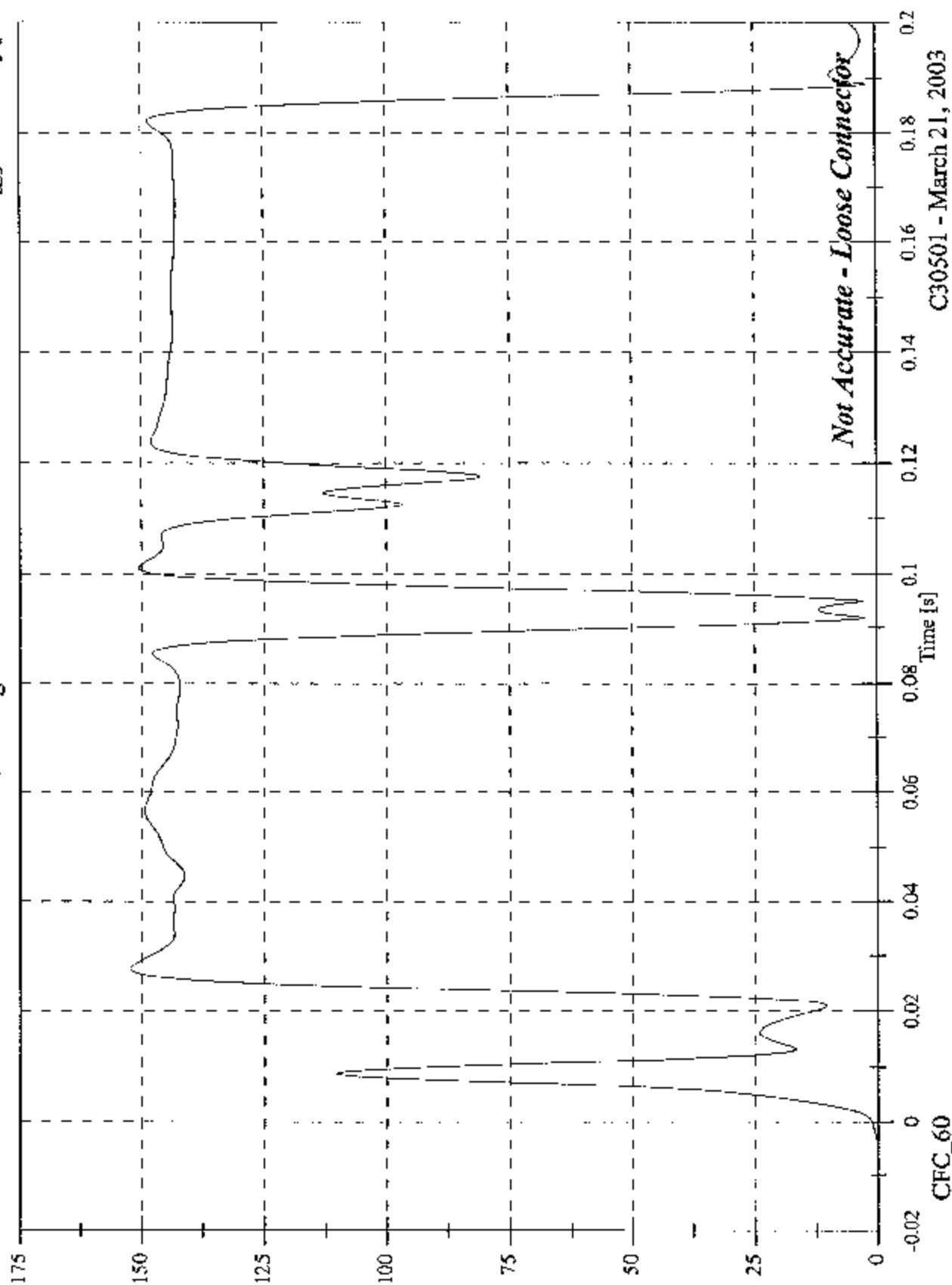


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A1 Right Front Sill Resultant

Max: 152.4 [g] at 0.028 [s]
Min: 0.0 [g] at -0.014 [s]



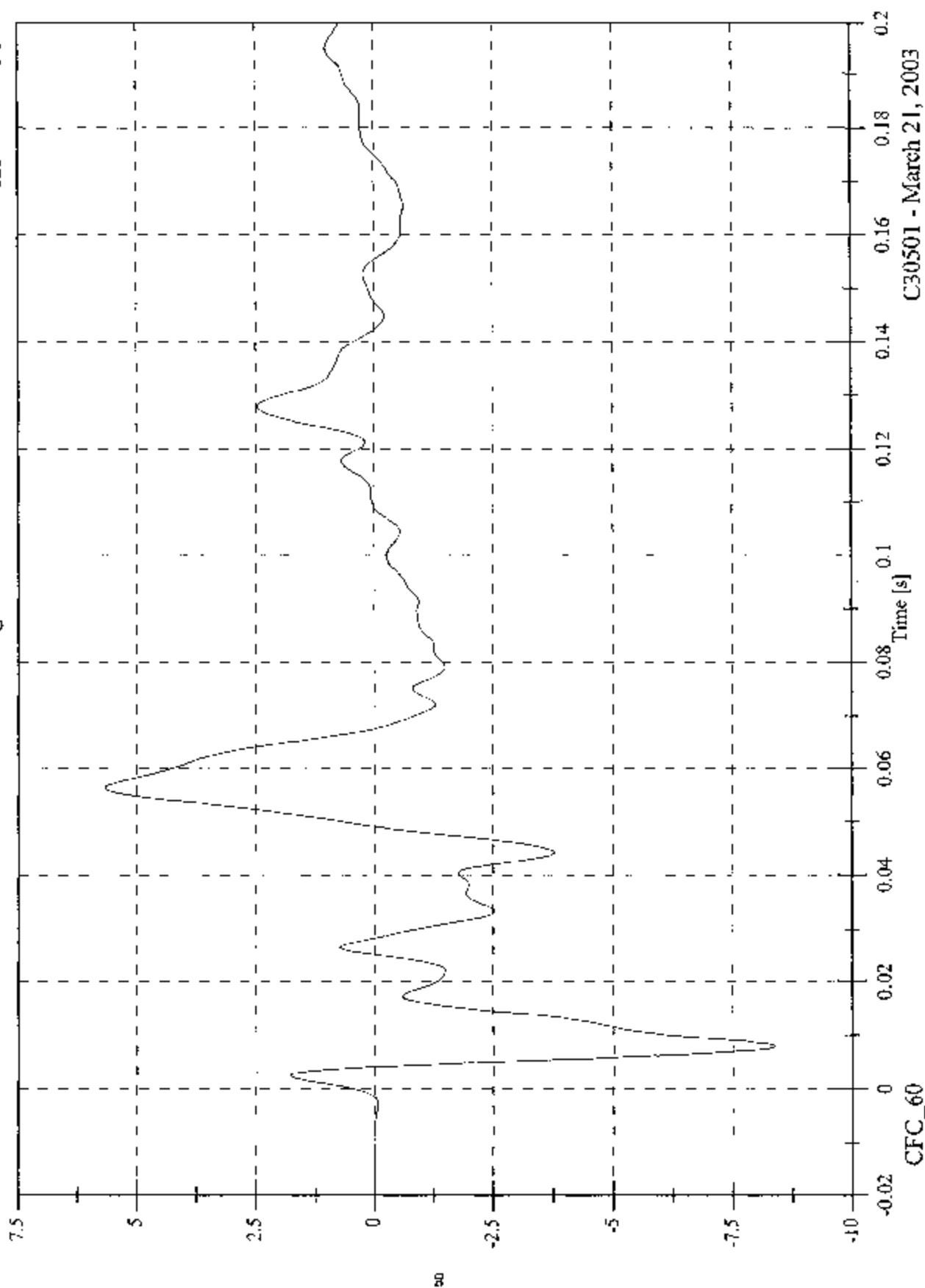
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A2 Right Rear Sill x

Max: 5.7 [g] at 0.057 [s]

Min: -8.4 [g] at 0.008 [s]

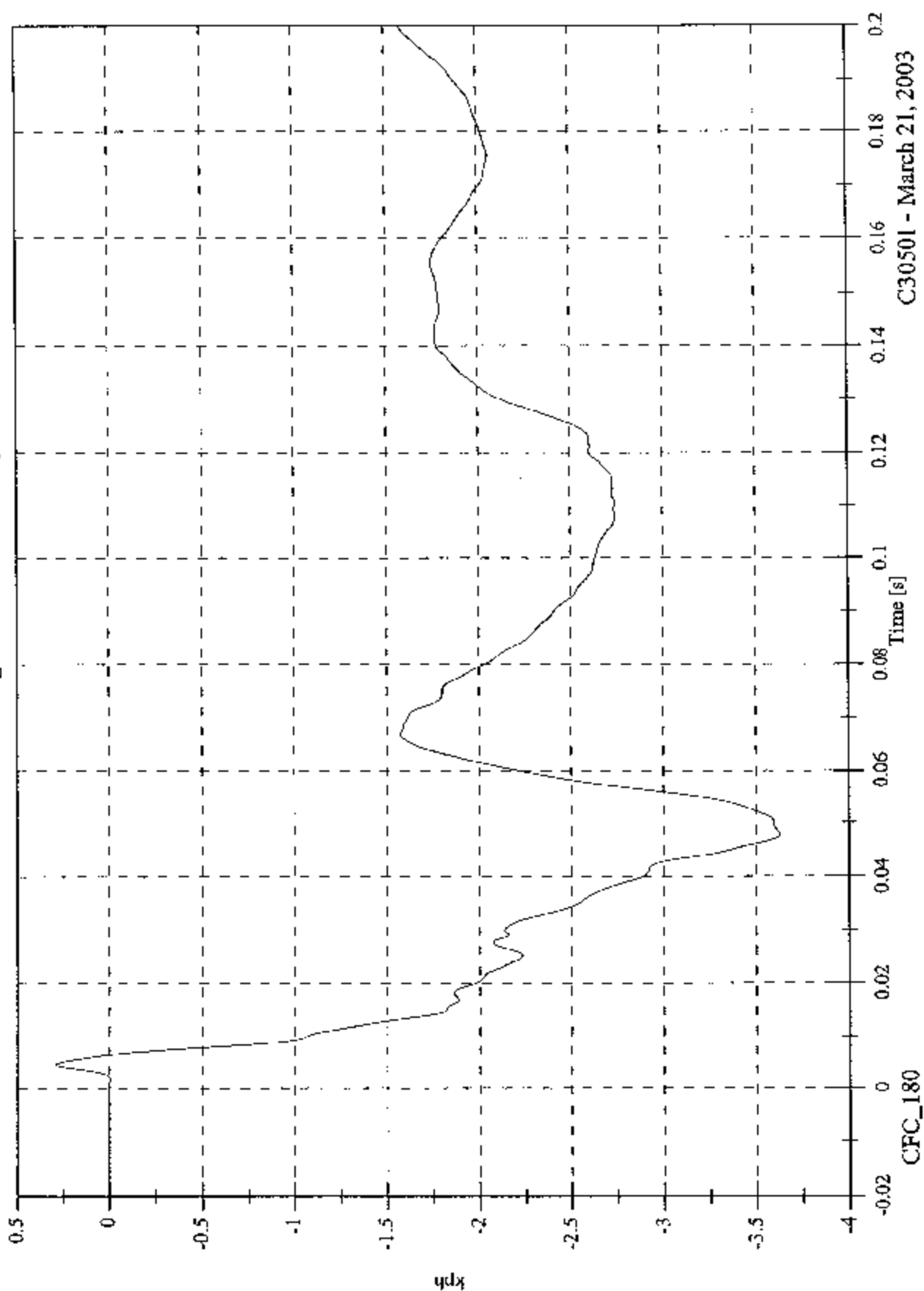


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A2 Right Rear Sill x Velocity

Max: 0.3 [kph] at 0.004 [s]
Min: -3.6 [kph] at 0.048 [s]

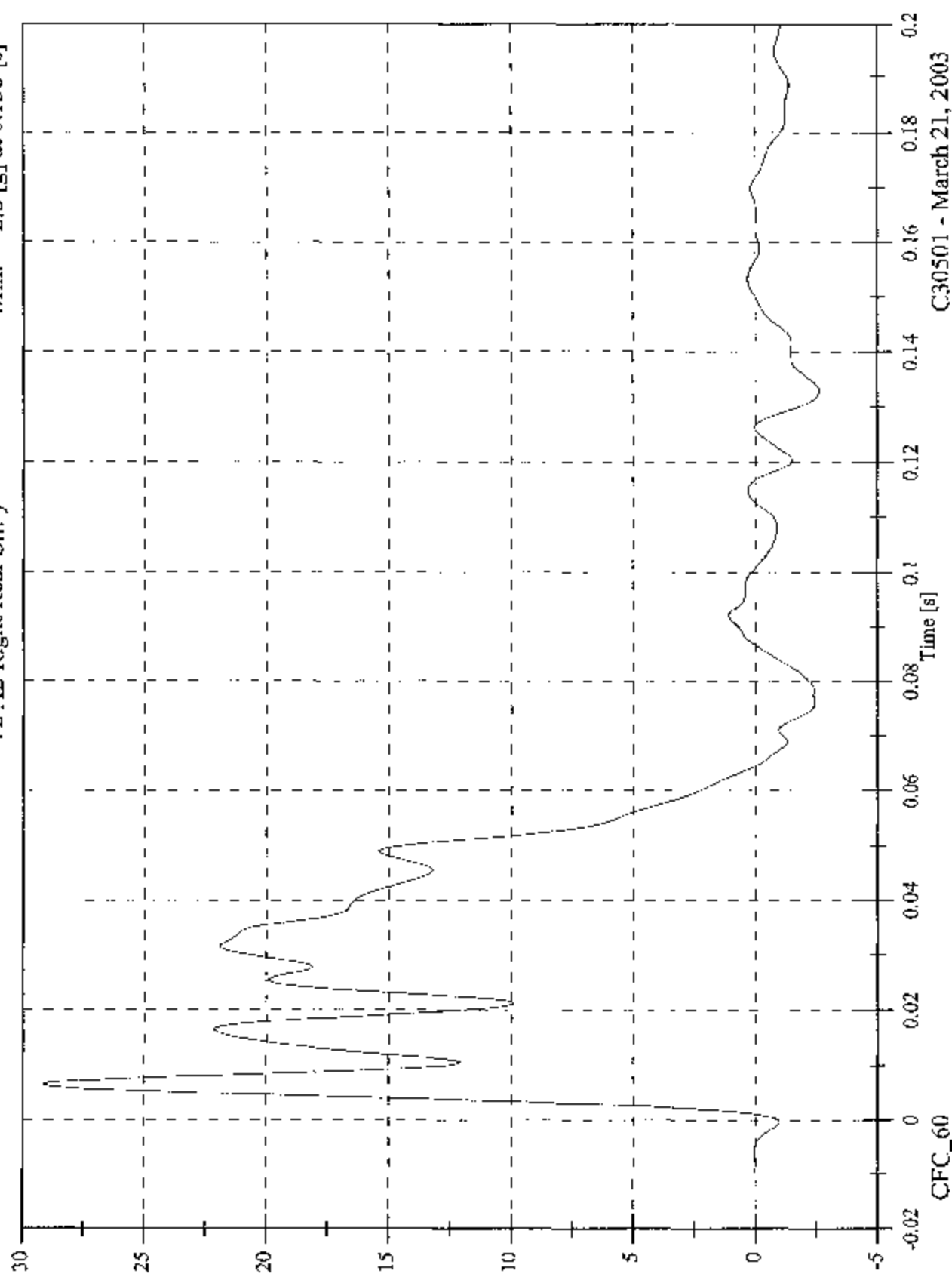


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A2 Right Rear Sill y

Max: 29.2 [g] at 0.006 [s]
Min: -2.6 [g] at 0.133 [s]

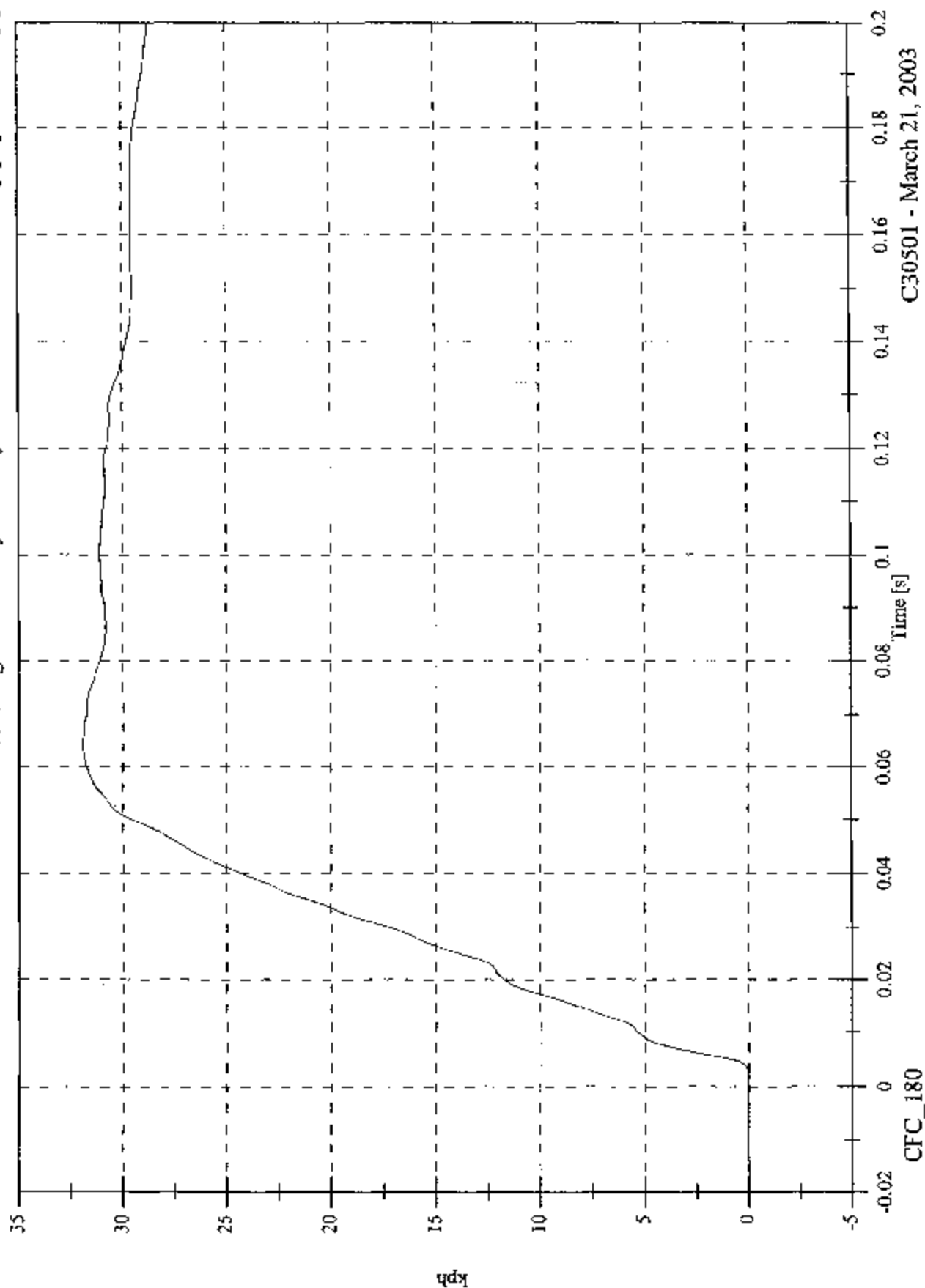


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A2 Right Rear Sill y Velocity

Max: 32.0 [kph] at 0.064 [s]
Min: -0.0 [kph] at -0.020 [s]



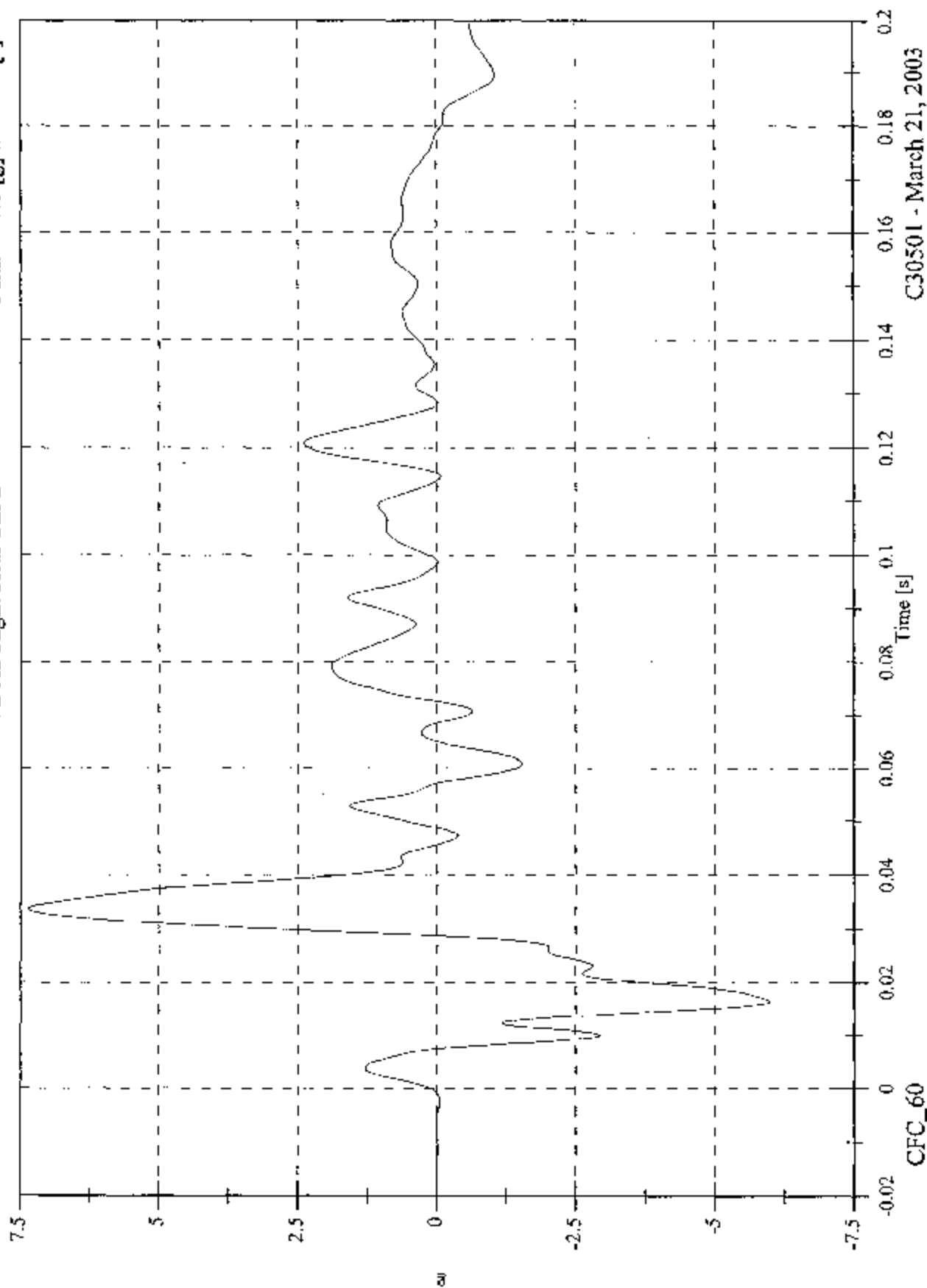
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A2 Right Rear Sill z

Max: 7.4 [g] at 0.034 [s]

Min: -6.0 [g] at 0.016 [s]

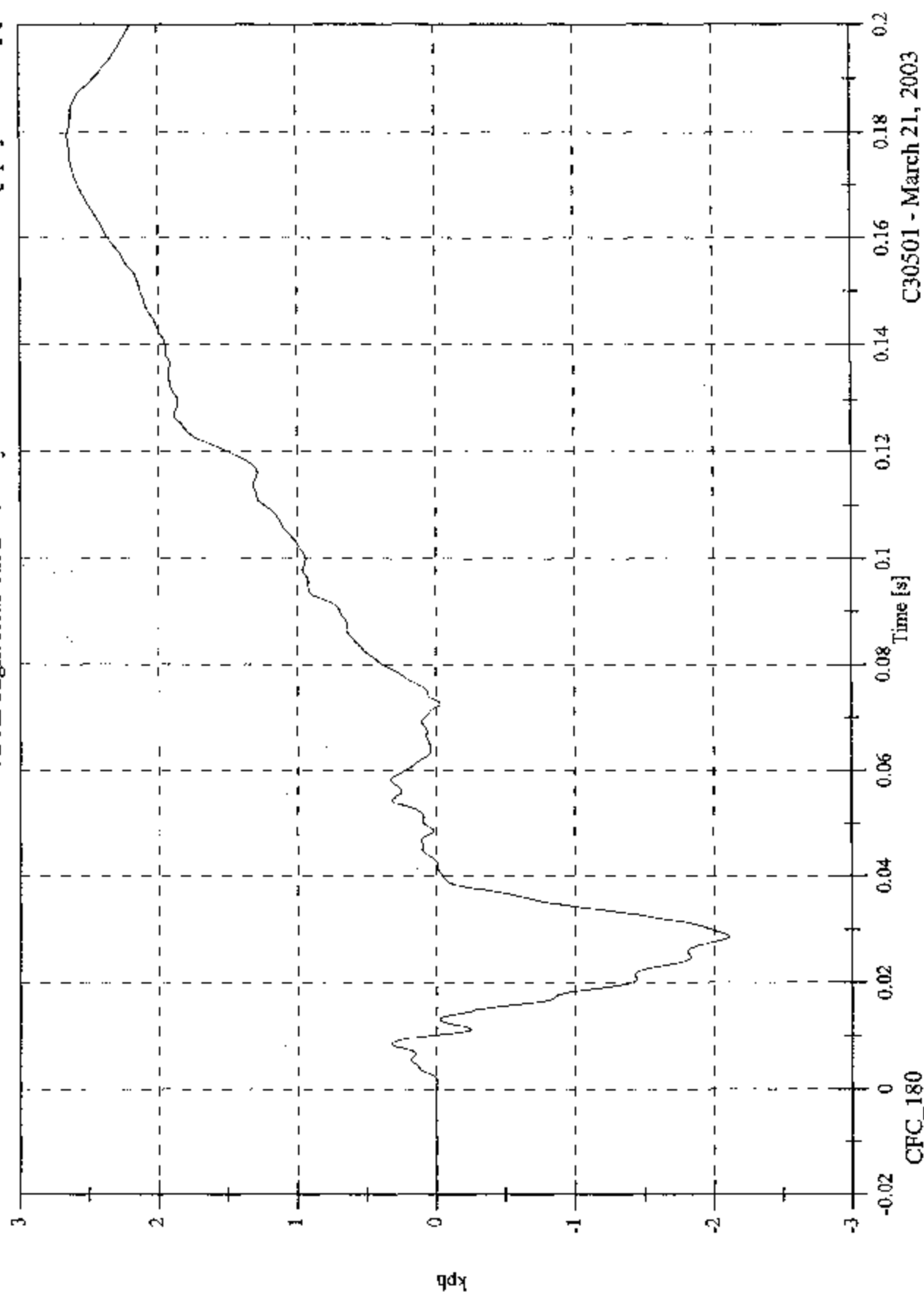


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A2 Right Rear Sill z Velocity

Max: 2.6 [kph] at 0.179 [s]
Min: -2.1 [kph] at 0.029 [s]

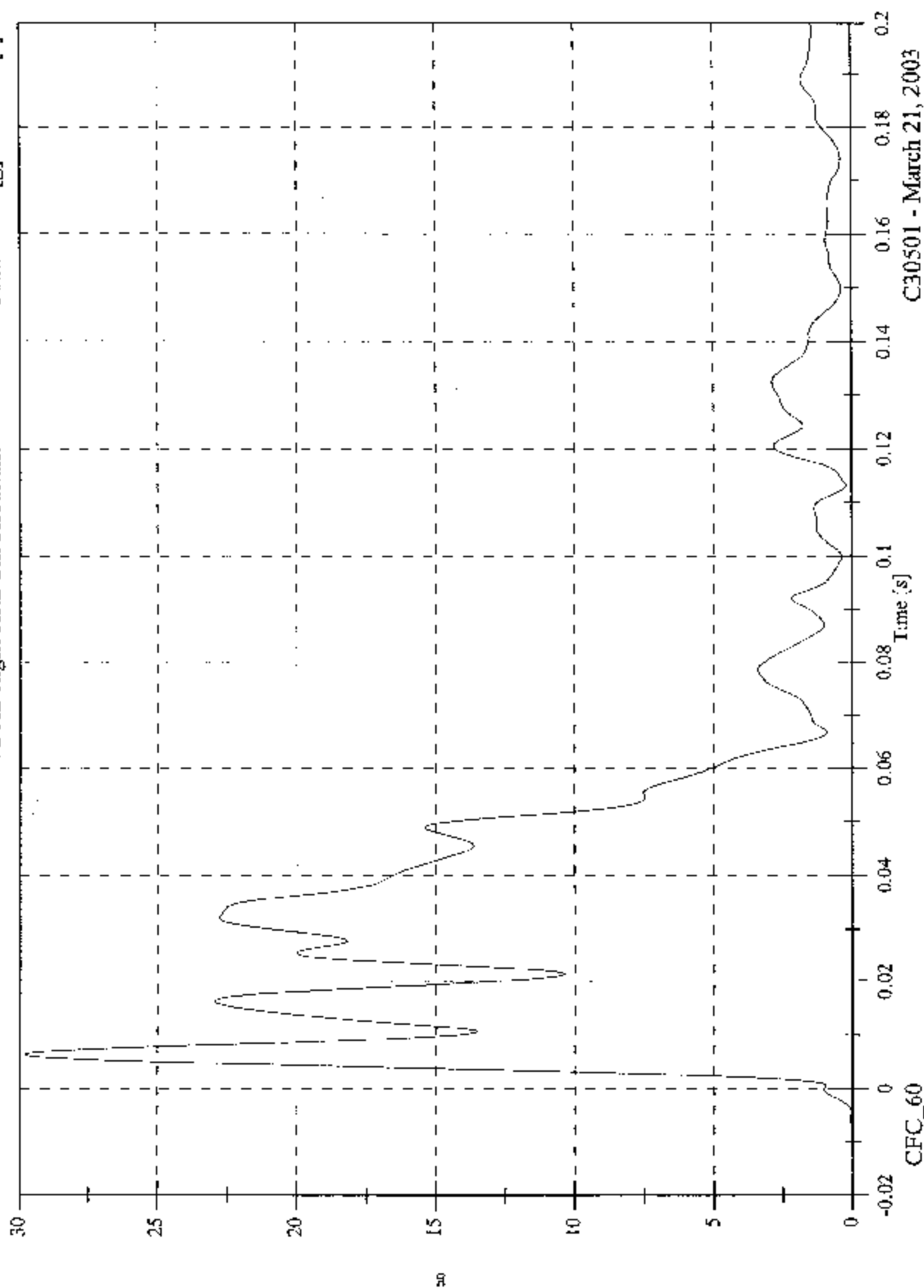


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A2 Right Rear Sill Resultant

Max: 29.8 [g] at 0.006 [s]
Min: 0.0 [g] at -0.014 [s]

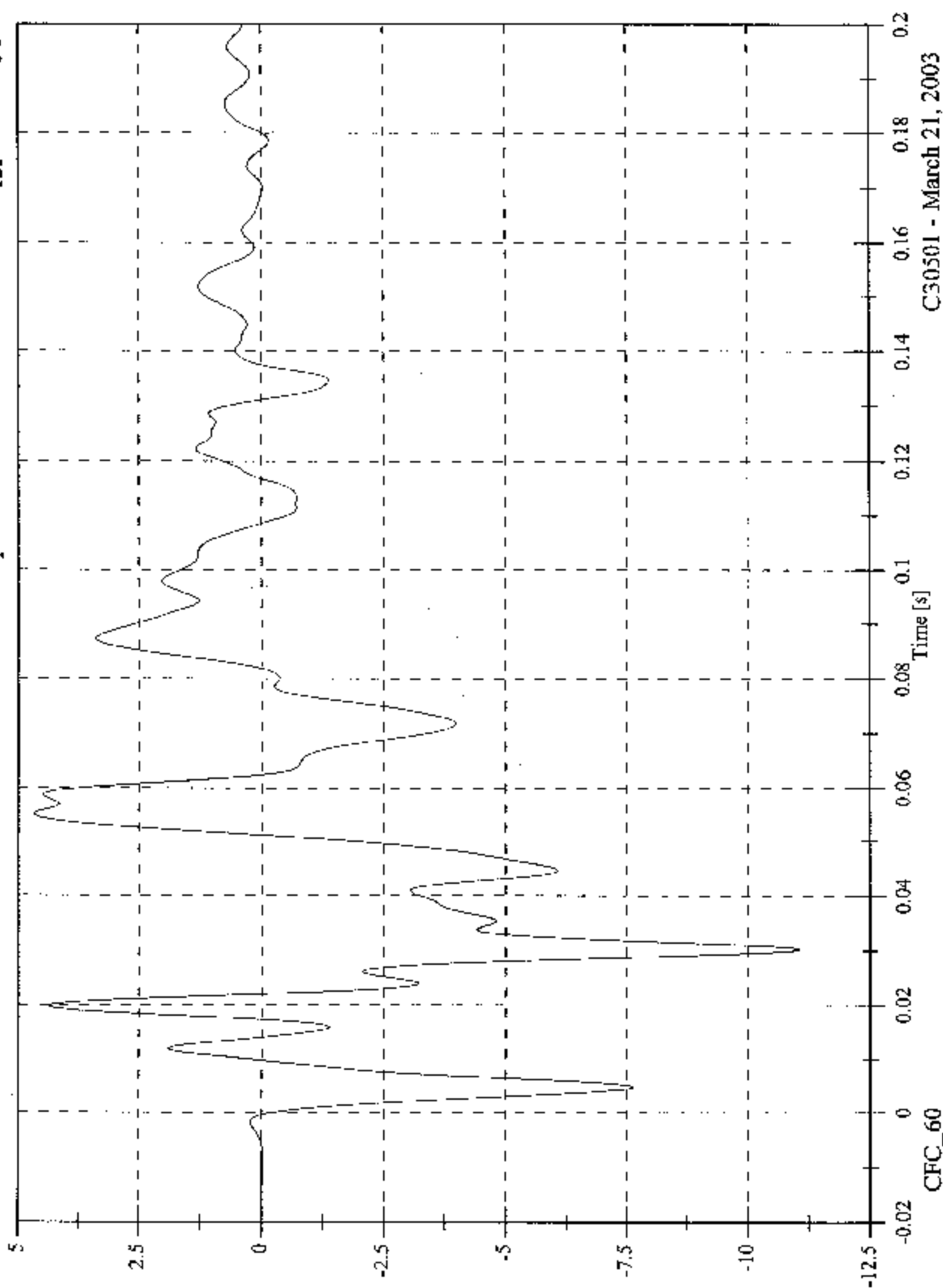


C30501 - March 21, 2003

2003 FMYSS 214D Test 4 2003 Hyundai Accent

V2 A3 Rear Floorpan x

Max: 4.7 [g] at 0.055 [s]
Min: -11.1 [g] at 0.030 [s]

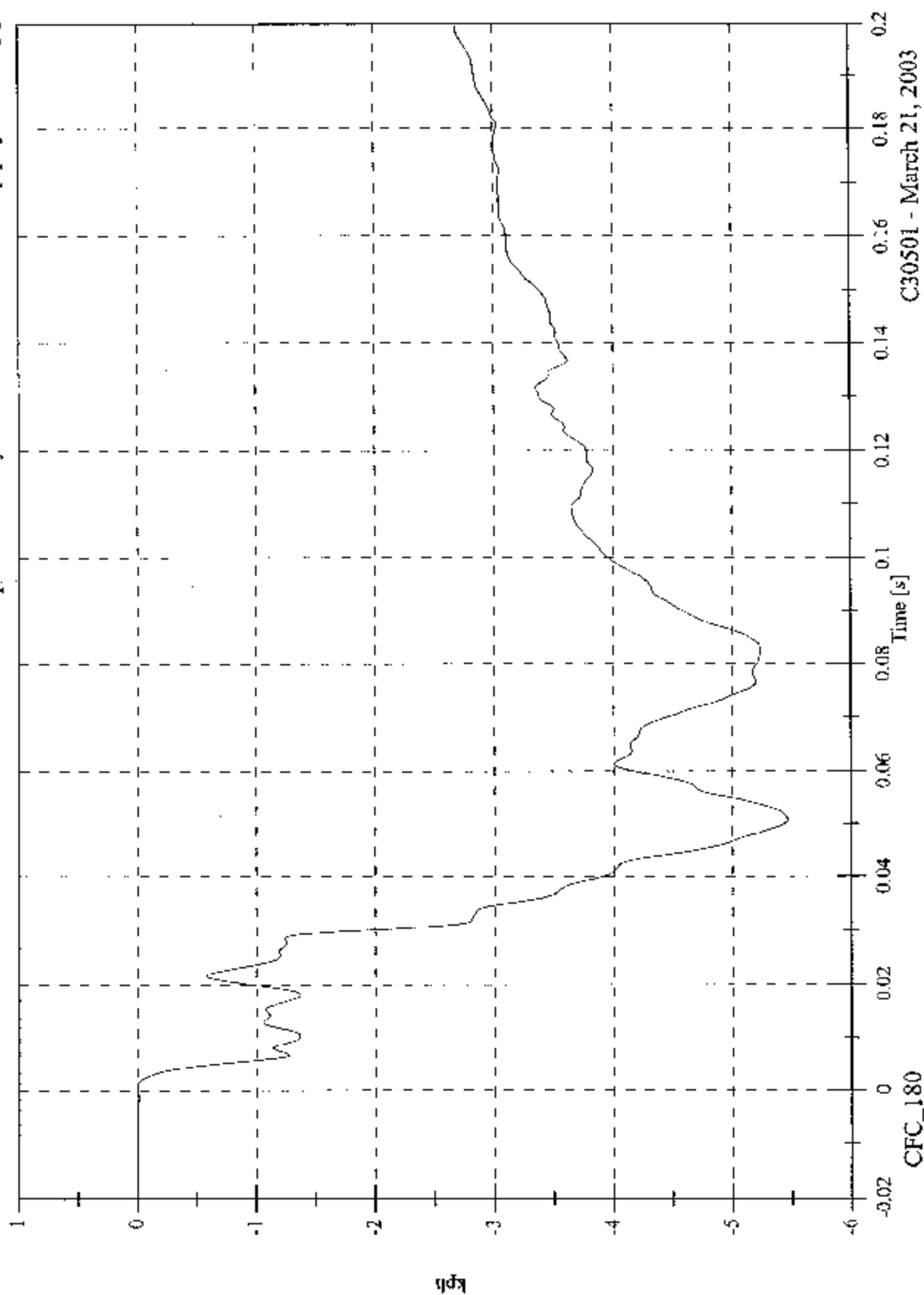


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A3 Rear Floorpan x Velocity

Max: 0.0 [kph] at 0.001 [s]
Min: -5.5 [kph] at 0.051 [s]

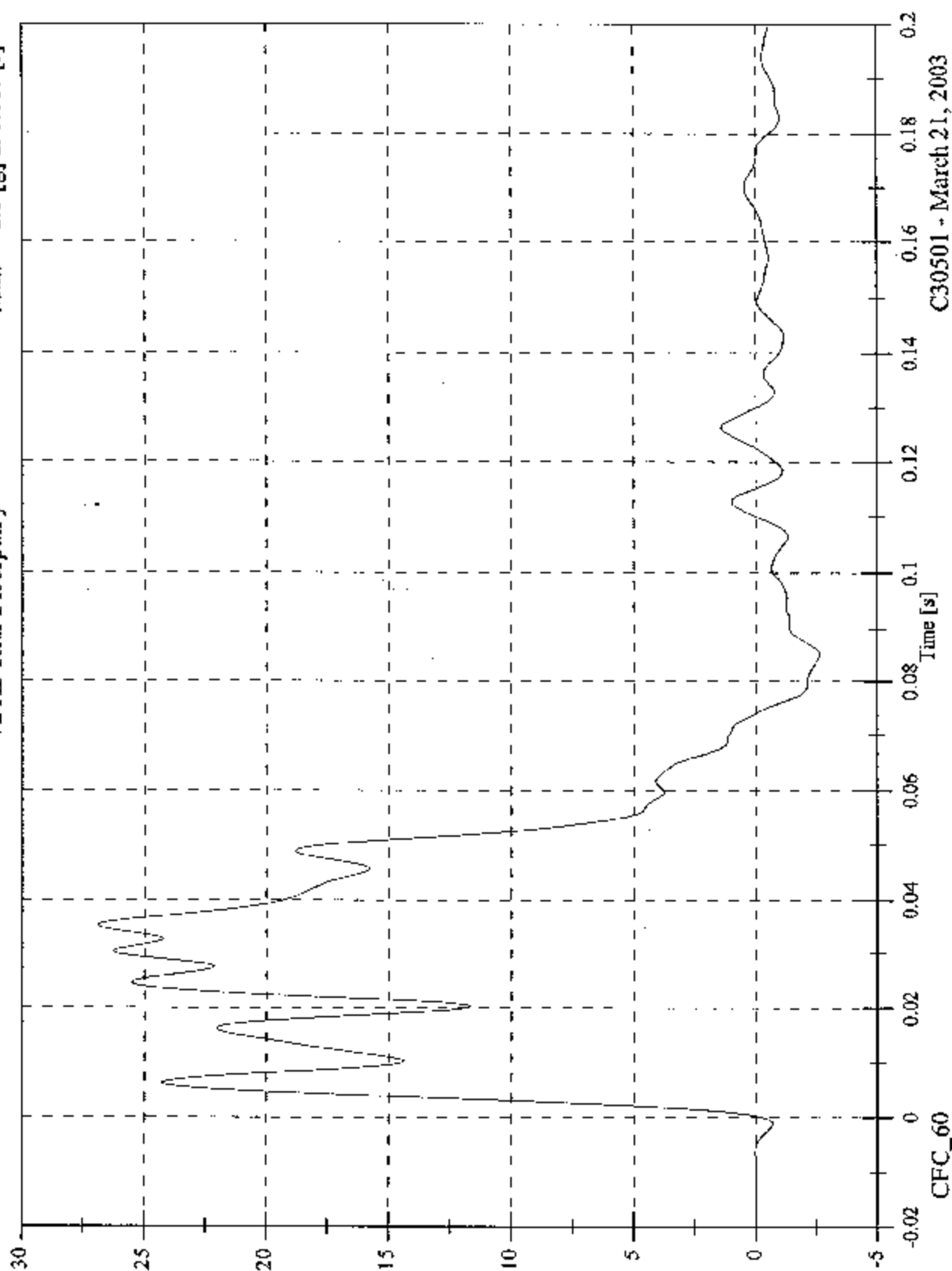


C30501 - March 21, 2003

2003 FM/VSS 214D Test 4 2003 Hyundai Accent

V2 A3 Rear Floorpan y

Max: 26.9 [g] at 0.035 [s]
Min: -2.6 [g] at 0.085 [s]



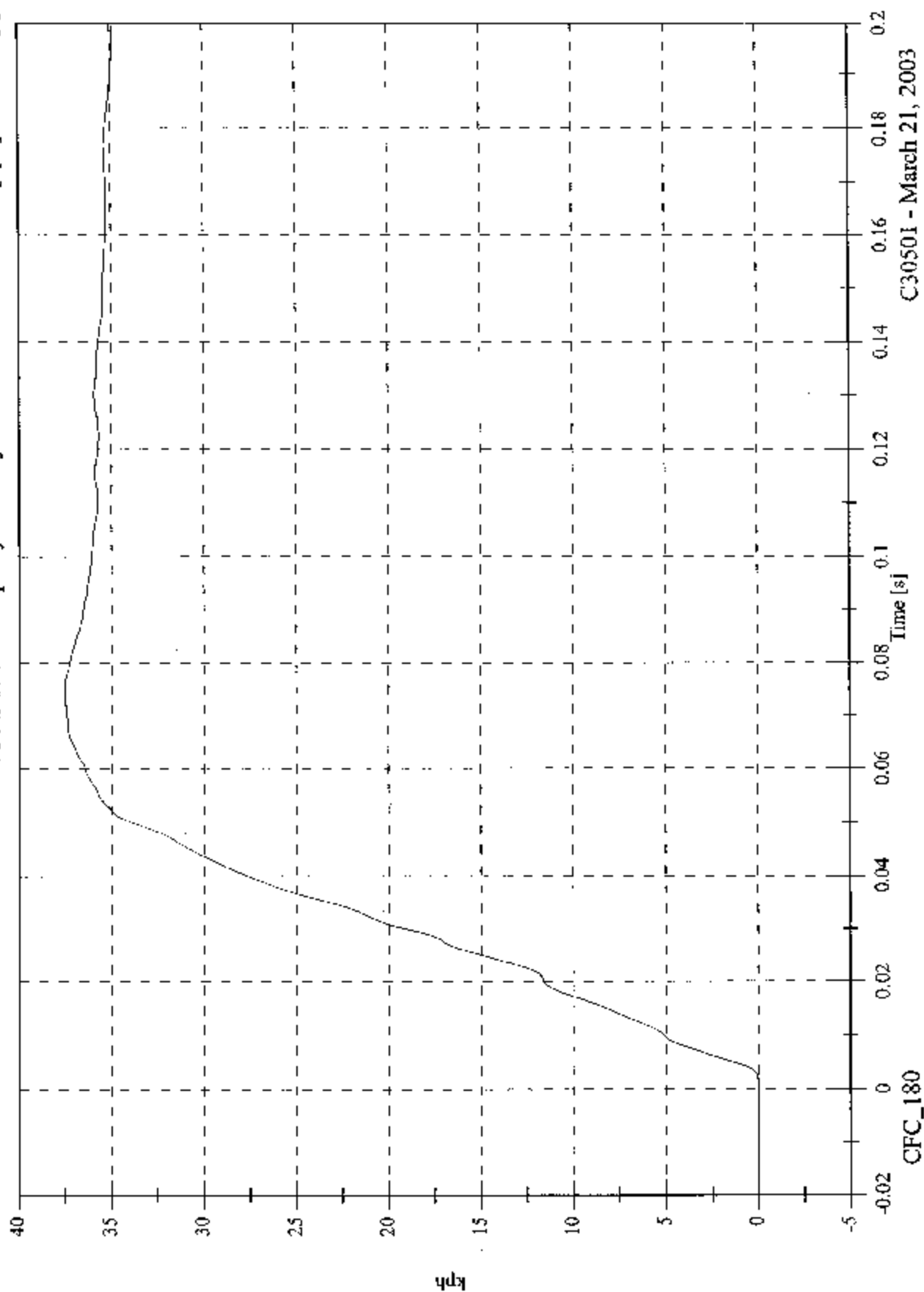
C30501 - March 21, 2003

2003 FMISS 214D Test 4 2003 Hyundai Accent

Max: 37.5 [kph] at 0.073 [s]

Min: -0.0 [kph] at -0.020 [s]

V2 A3 Rear Floorpan y Velocity

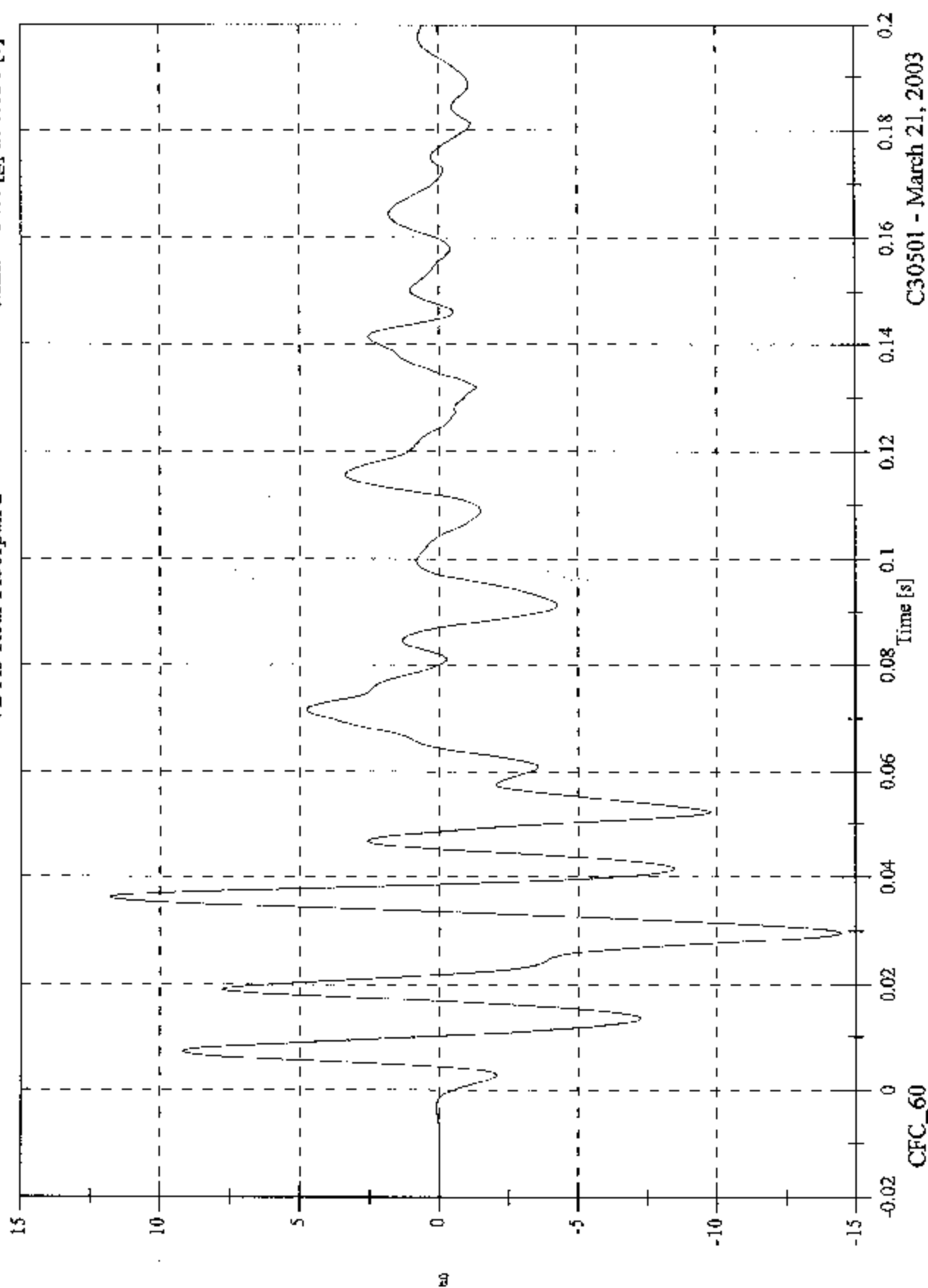


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A3 Rear Floorpan z

Max: 11.8 [g] at 0.036 [s]
Min: -14.4 [g] at 0.030 [s]

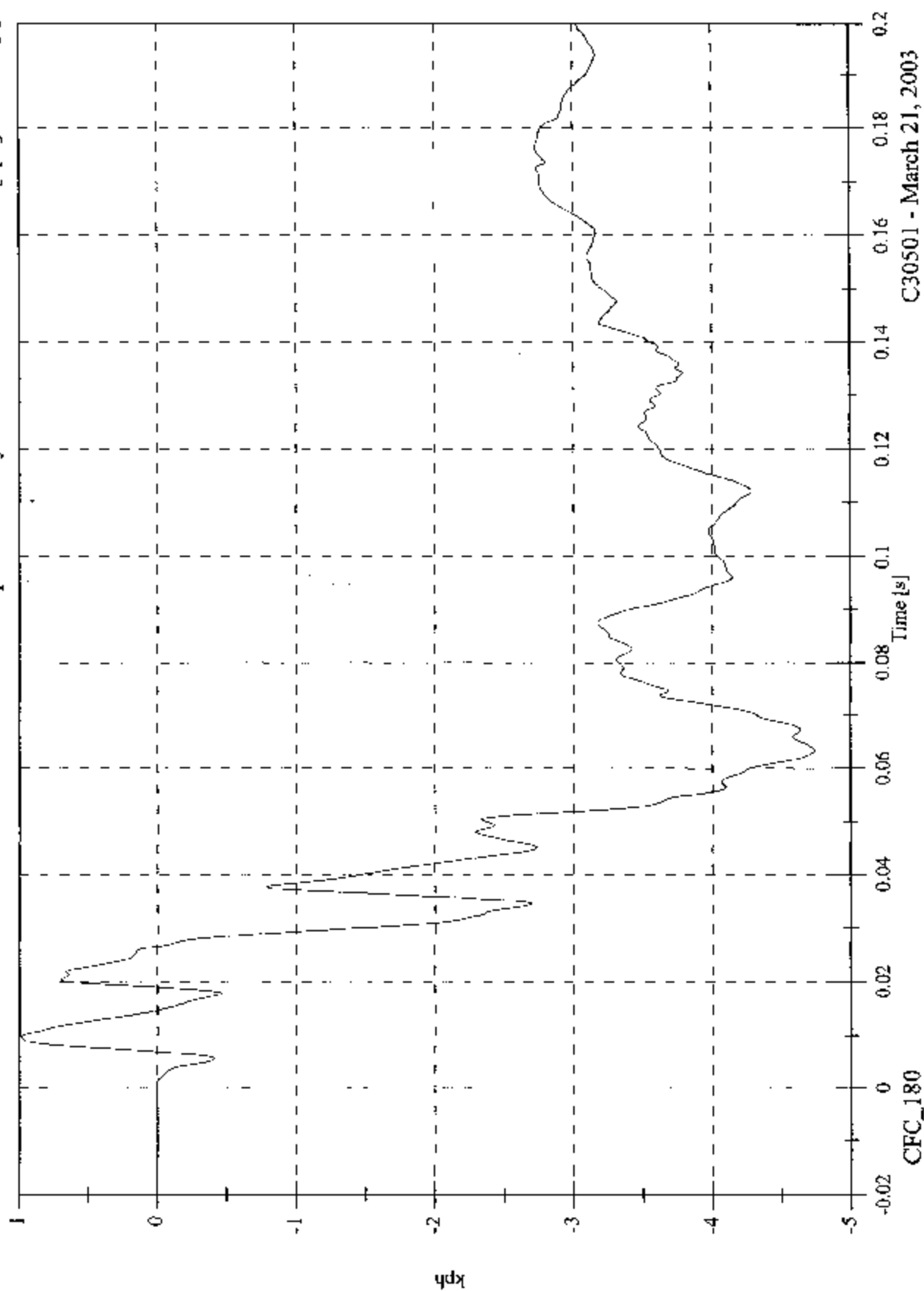


2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 1.0 [kph] at 0.010 [s]

Min: -4.7 [kph] at 0.063 [s]

V2 A3 Rear Floorpan z Velocity

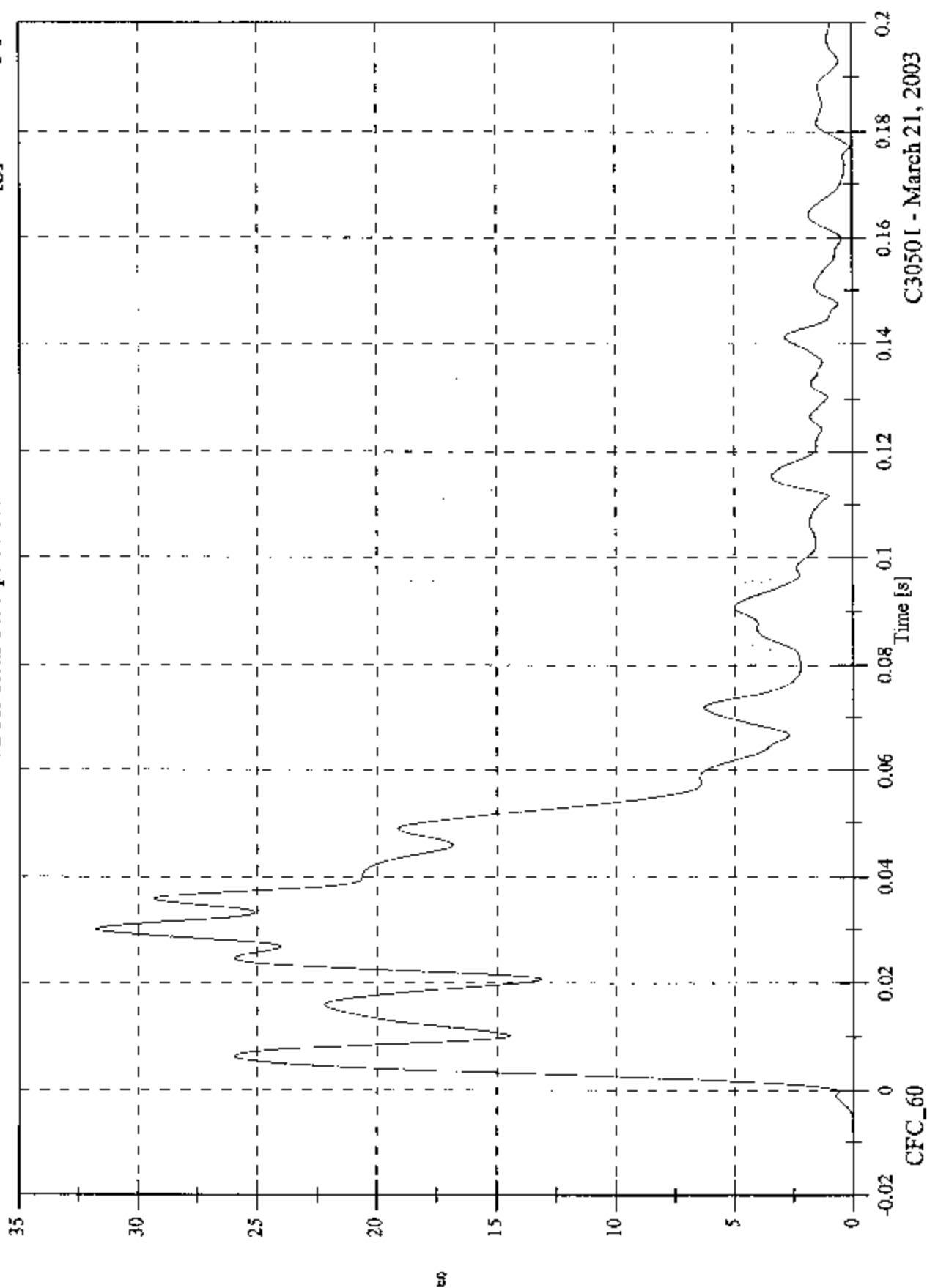


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A3 Rear Floorpan Resultant

Max: 31.8 [g] at 0.030 [s]
Min: 0.0 [g] at -0.017 [s]

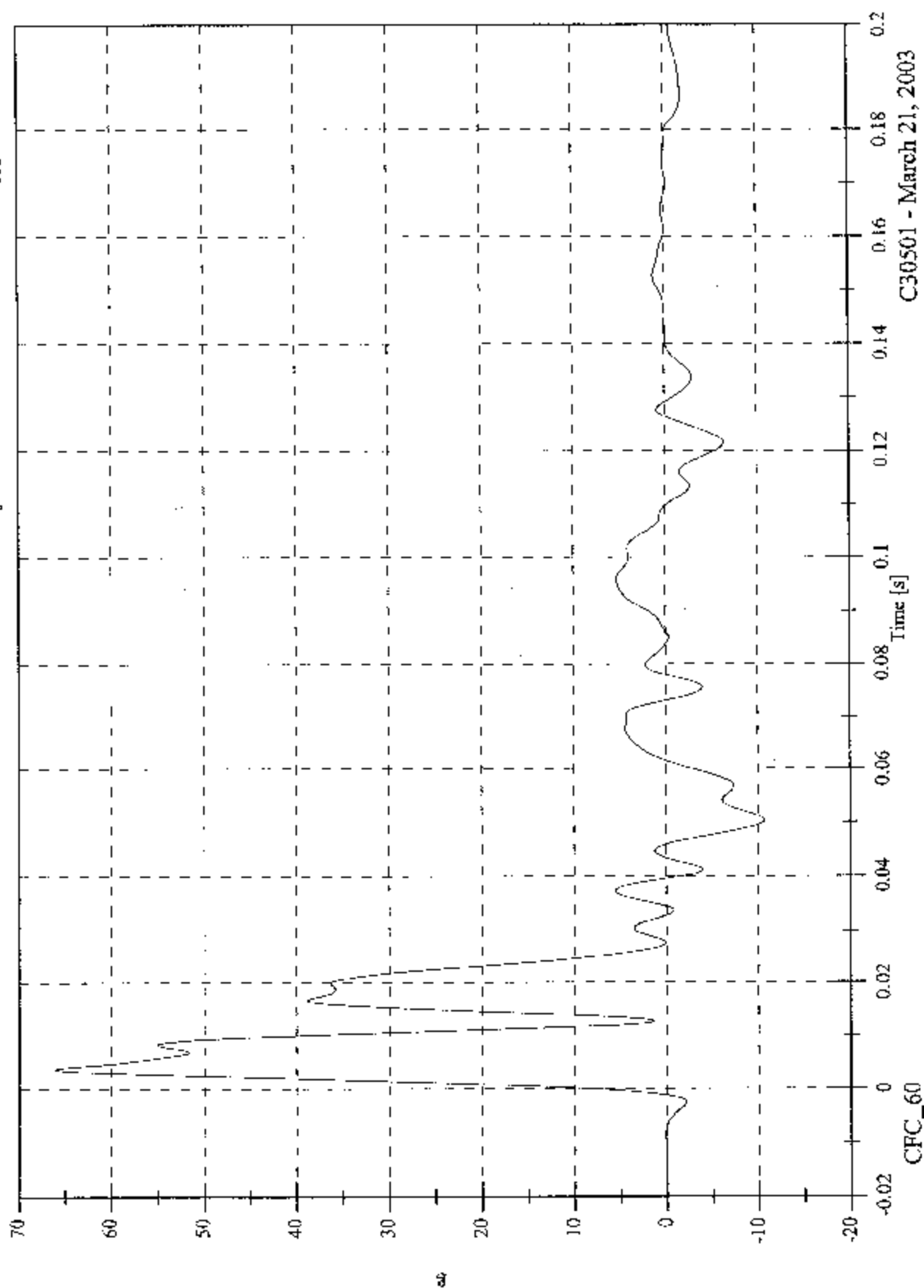


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A4 Left Rear Sill y

Max: 66.0 [g] at 0.004 [s]
Min: -10.7 [g] at 0.050 [s]

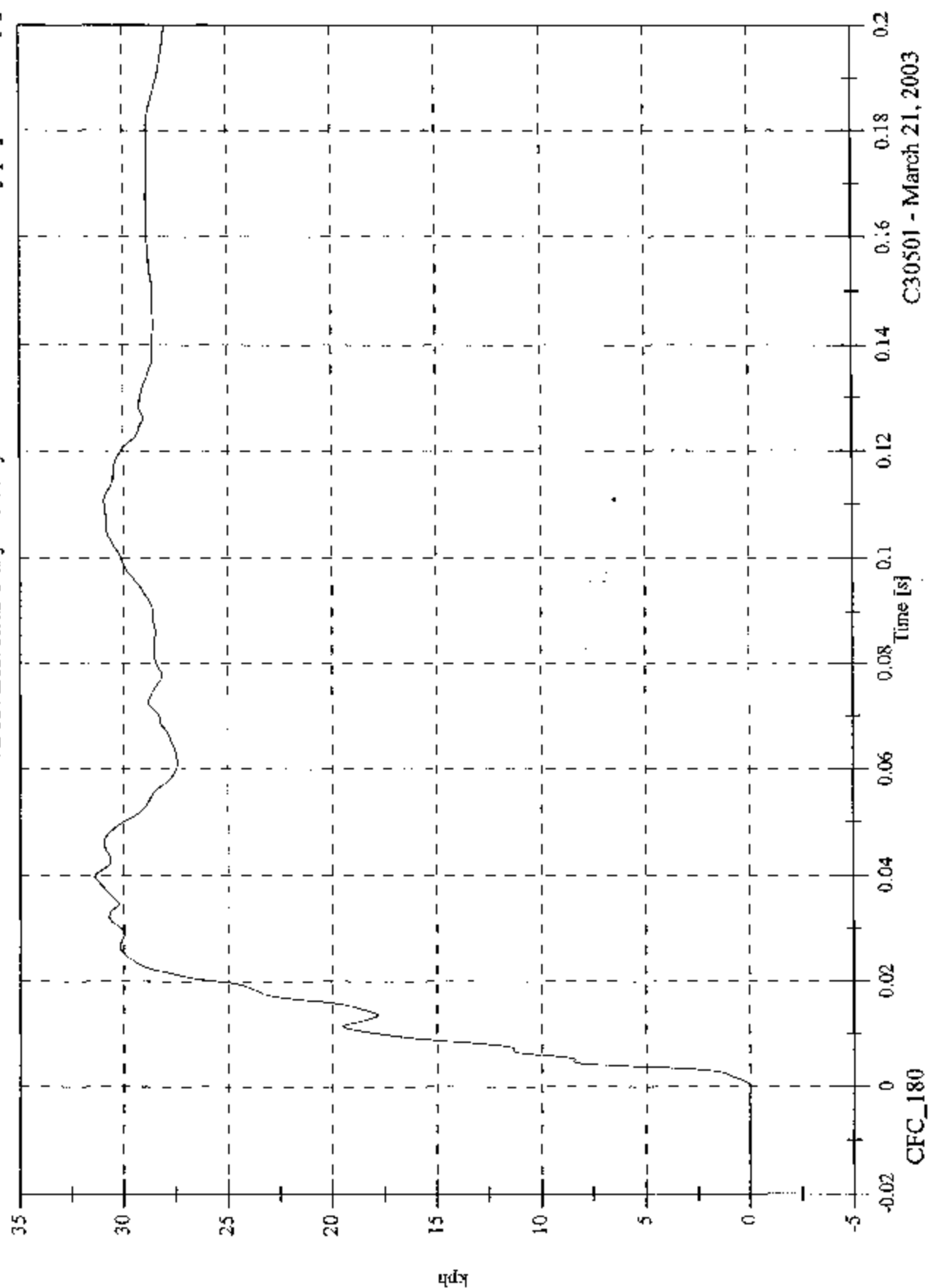


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A4 Left Rear Sill y Velocity

Max: 31.4 [kph] at 0.040 [s]
Min: -0.0 [kph] at -0.000 [s]



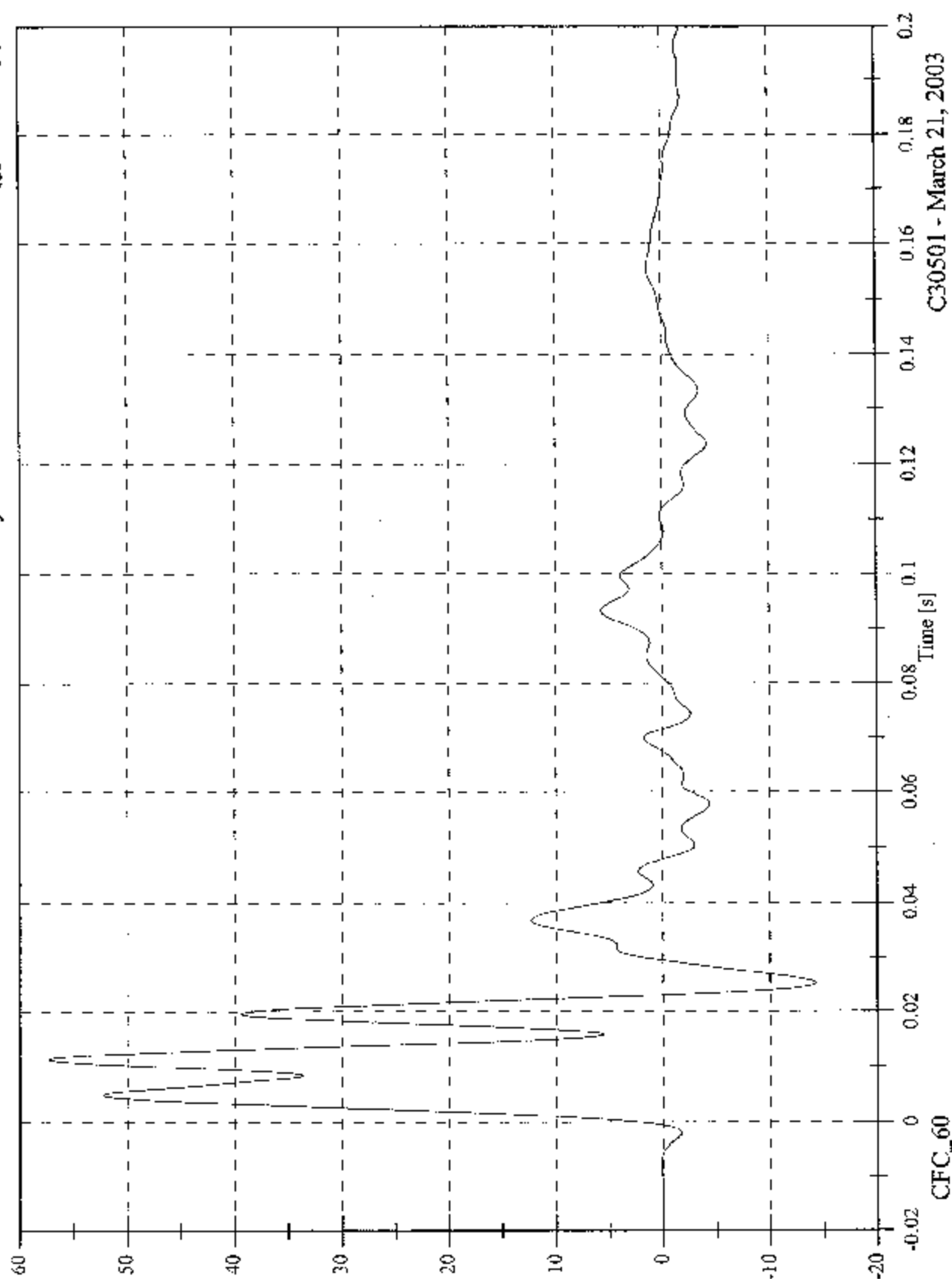
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A5 Left Front Sill y

Max: 57.3 [g] at 0.011 [s]
Min: -14.3 [g] at 0.025 [s]

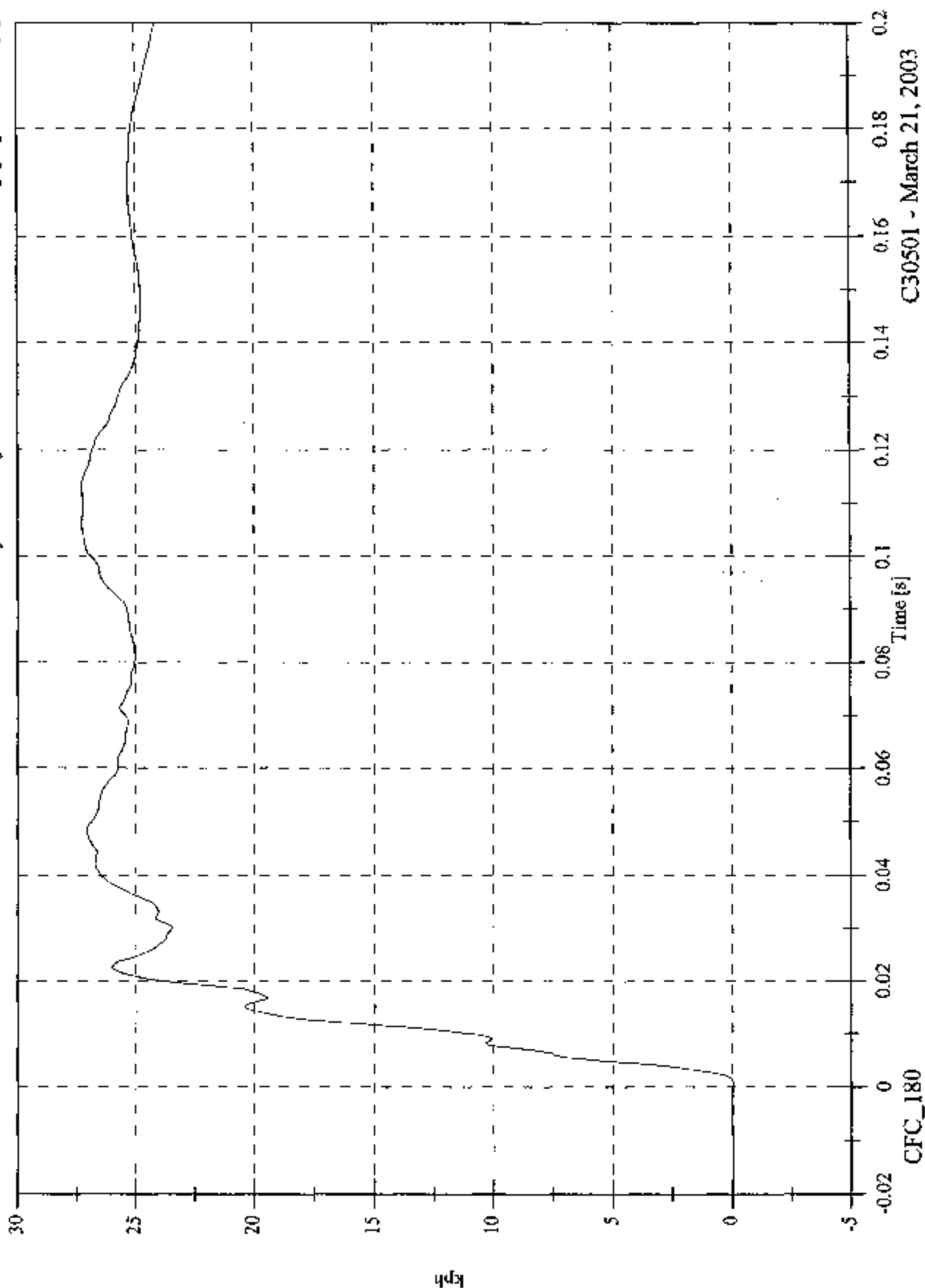


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A5 Left Front Sill y Velocity

Max: 27.3 [kph] at 0.113 [s]
Min: -0.0 [kph] at 0.001 [s]



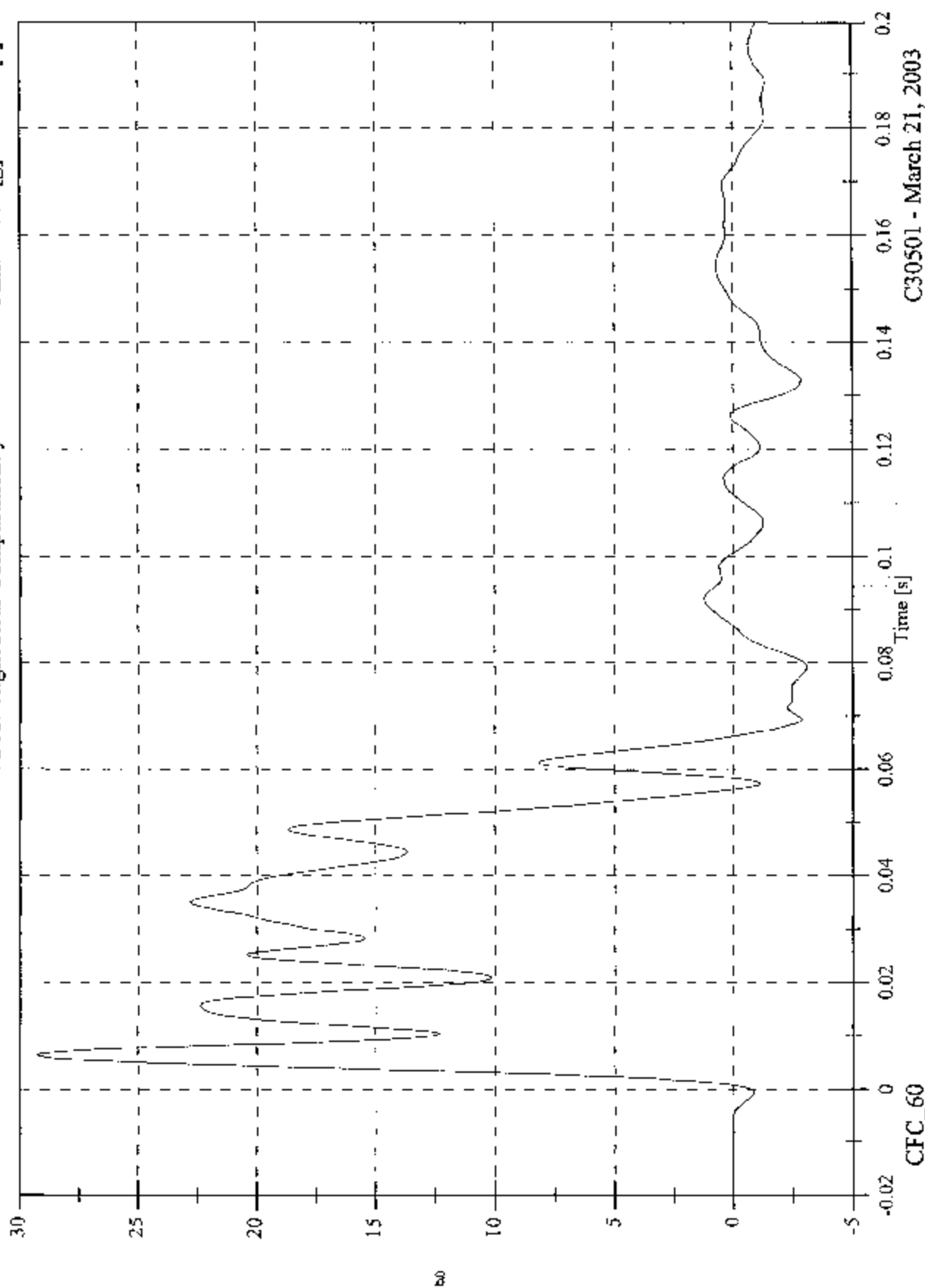
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A7 Right Rear Compartment y

Max: 29.2 [g] at 0.006 [s]

Min: -3.1 [g] at 0.079 [s]

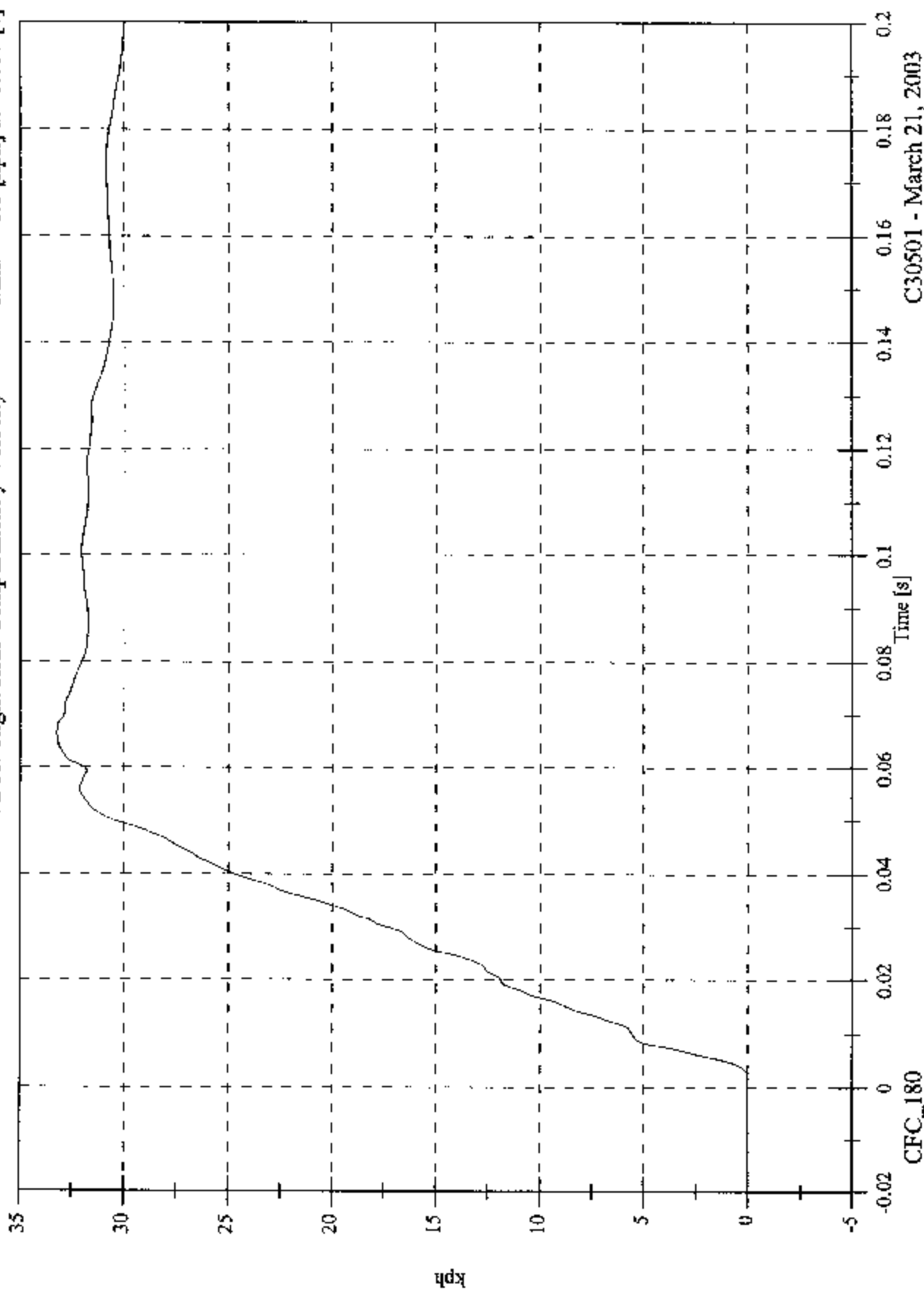


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 33.2 [kph] at 0.067 [s]
Min: -0.0 [kph] at -0.017 [s]

V2 A7 Right Rear Compartment y Velocity

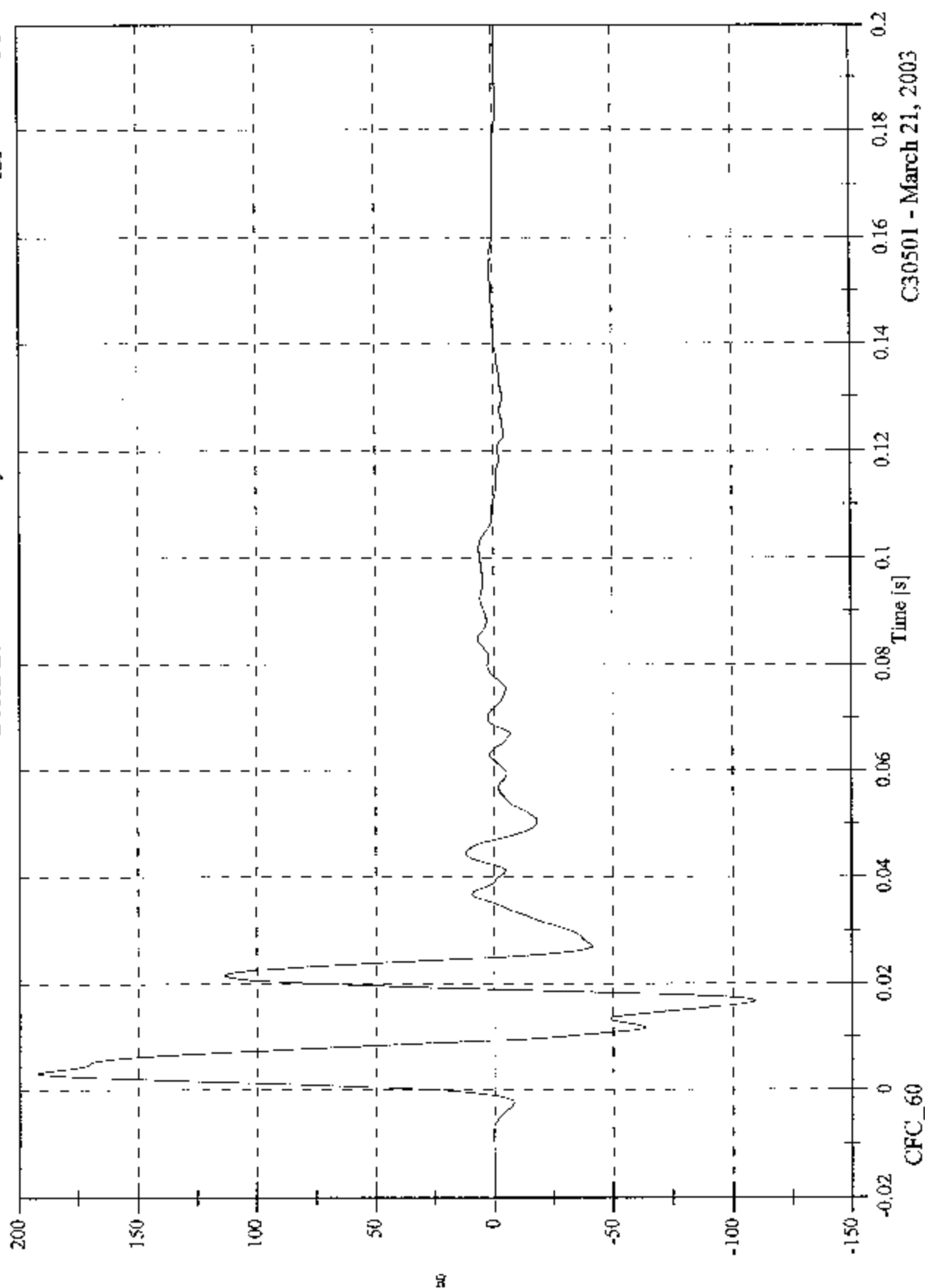


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 192.0 [g] at 0.003 [s]
Min: -109.6 [g] at 0.017 [s]

V2 A12 Left Lower B Post y

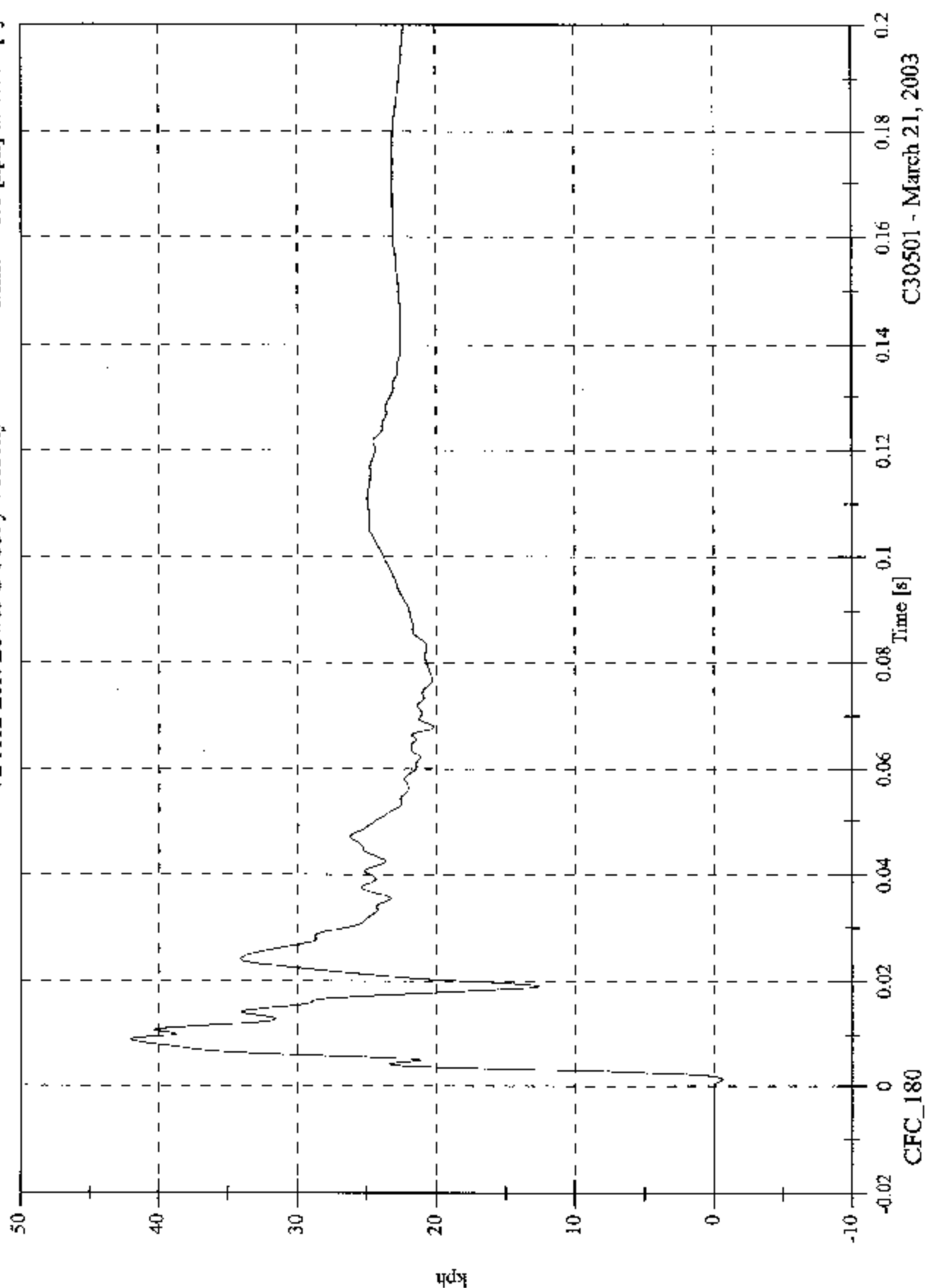


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 42.0 [kph] at 0.009 [s]
 Min: -0.6 [kph] at 0.001 [s]

V2 A12 Left Lower B Post y Velocity

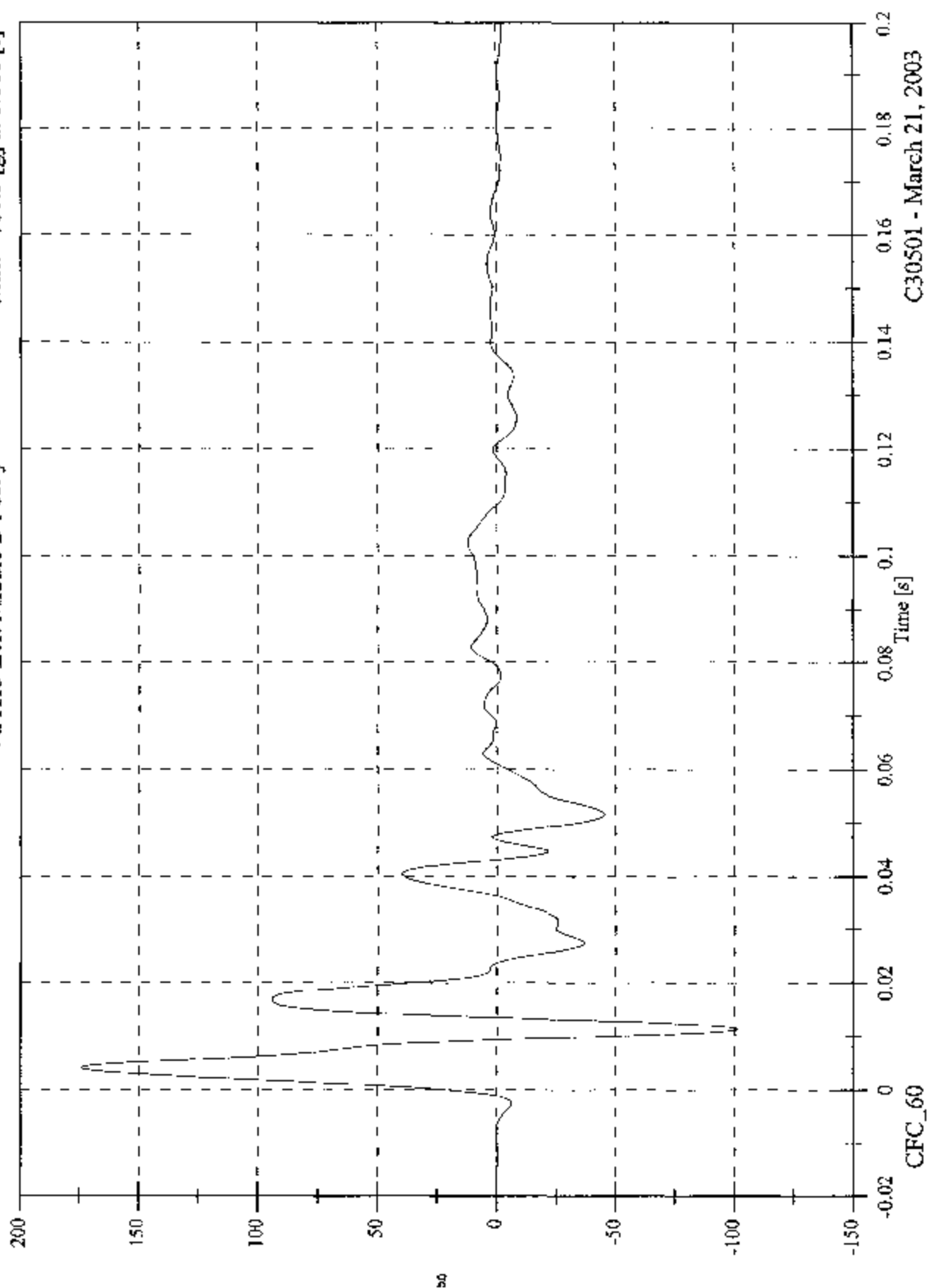


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A13 Left Middle B Post y

Max: 174.2 [g] at 0.004 [s]
Min: -101.3 [g] at 0.011 [s]

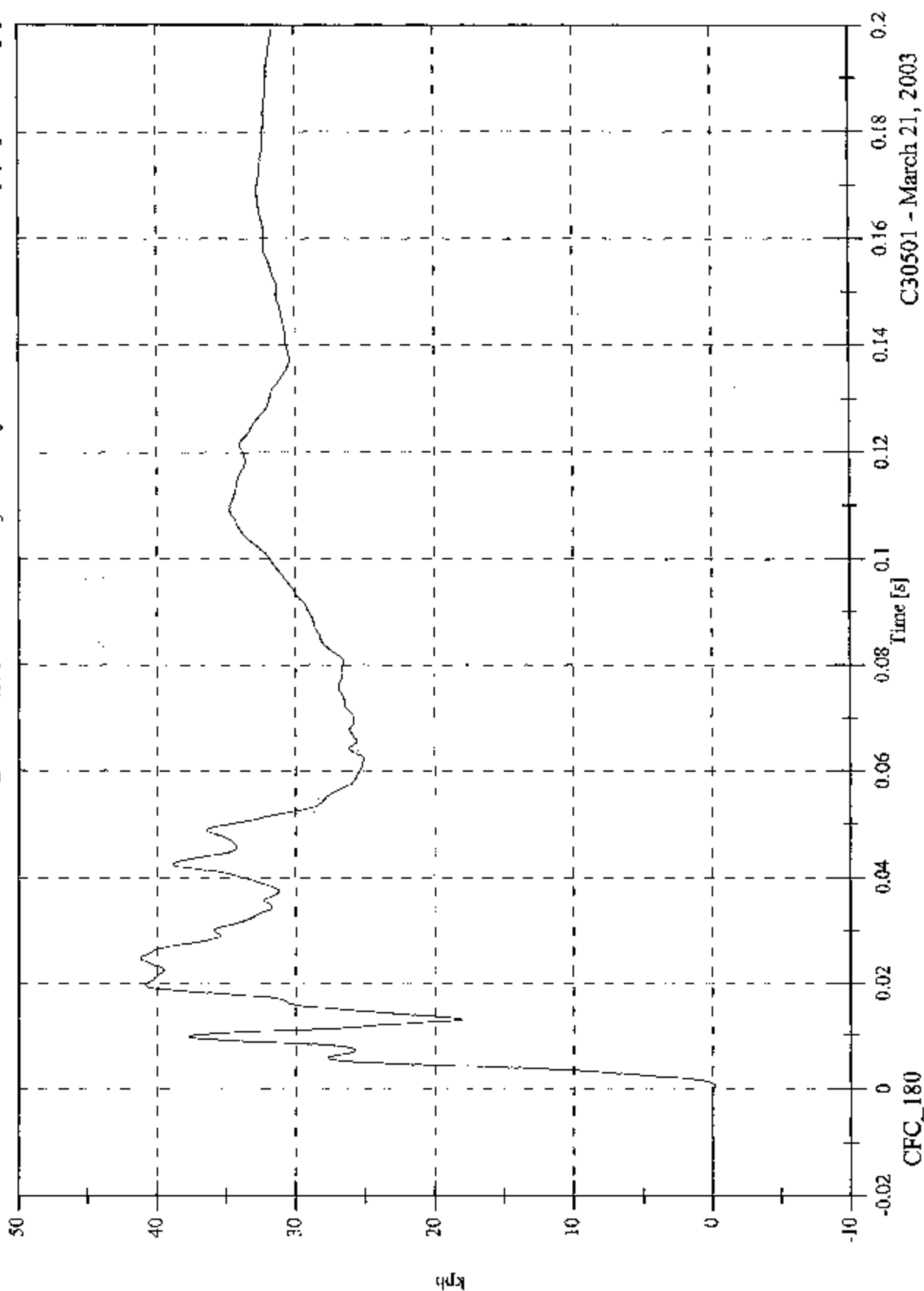


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A13 Left Middle B Post y Velocity

Max: 41.2 [kph] at 0.025 [s]
Min: -0.1 [kph] at 0.001 [s]

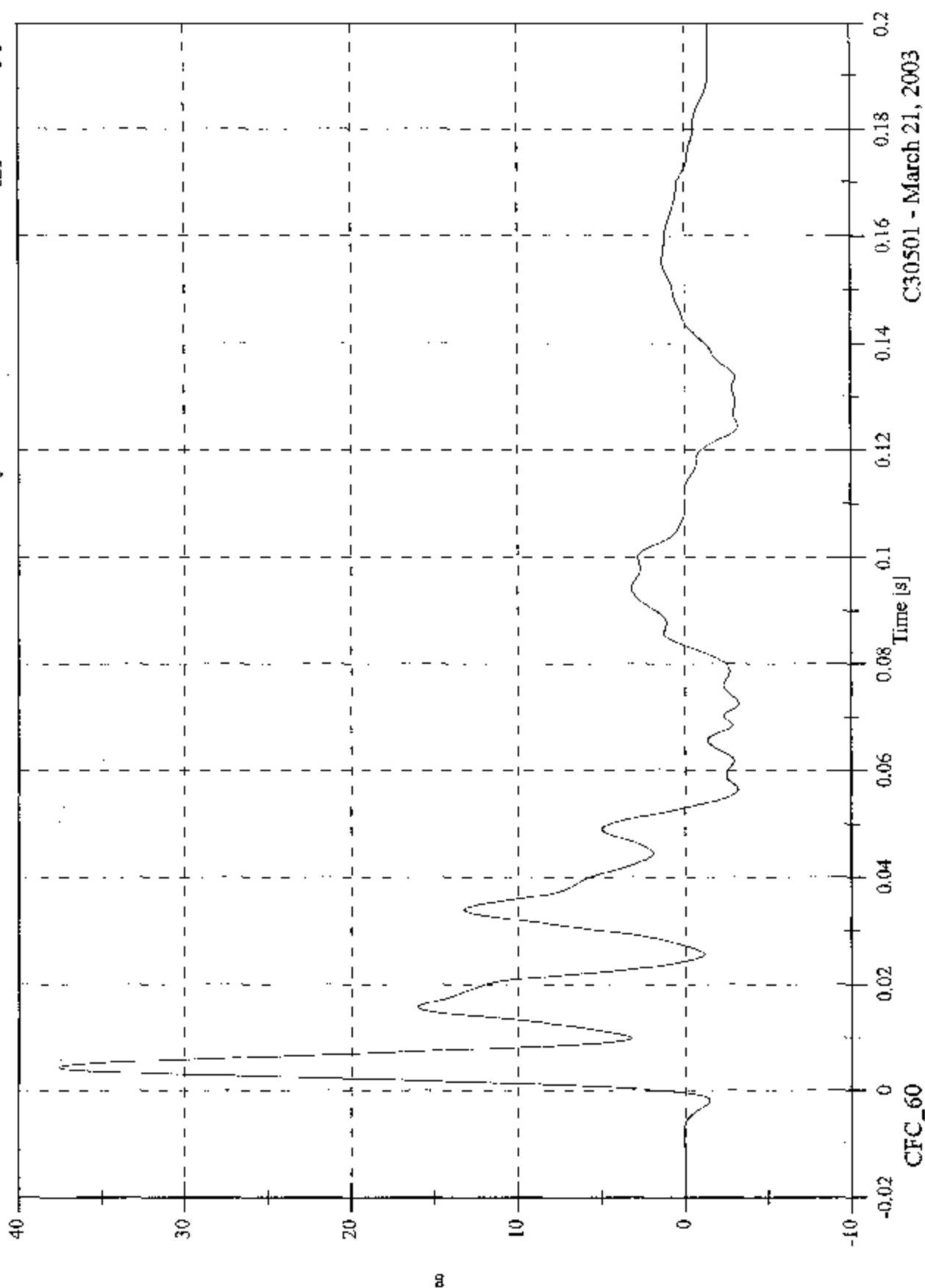


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A14 Left Lower A Post y

Max: 37.6 [g] at 0.004 [s]
Min: -3.2 [g] at 0.073 [s]

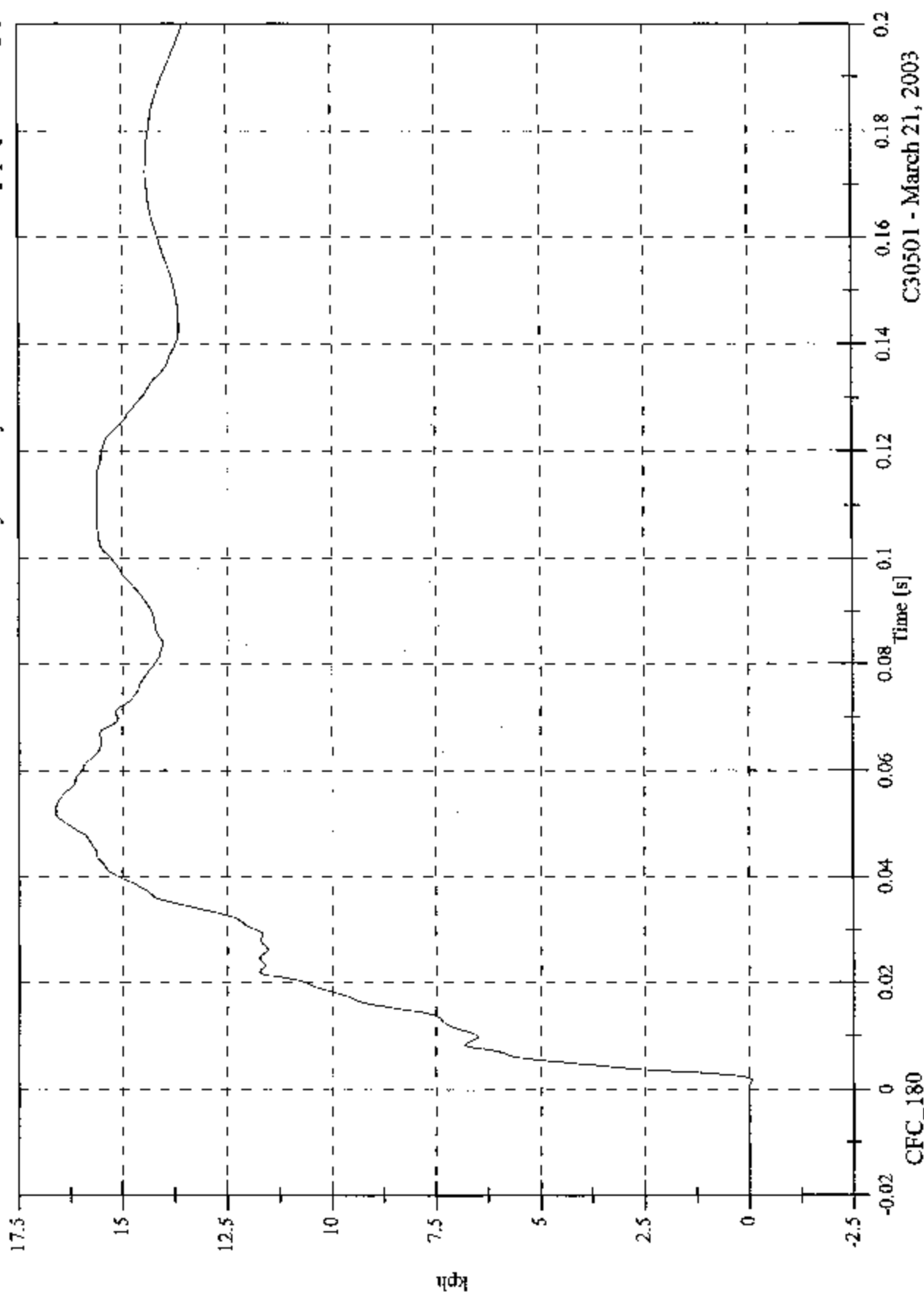


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A14 Left Lower A Post y Velocity

Max: 16.6 [kph] at 0.053 [s]
Min: -0.1 [kph] at 0.002 [s]

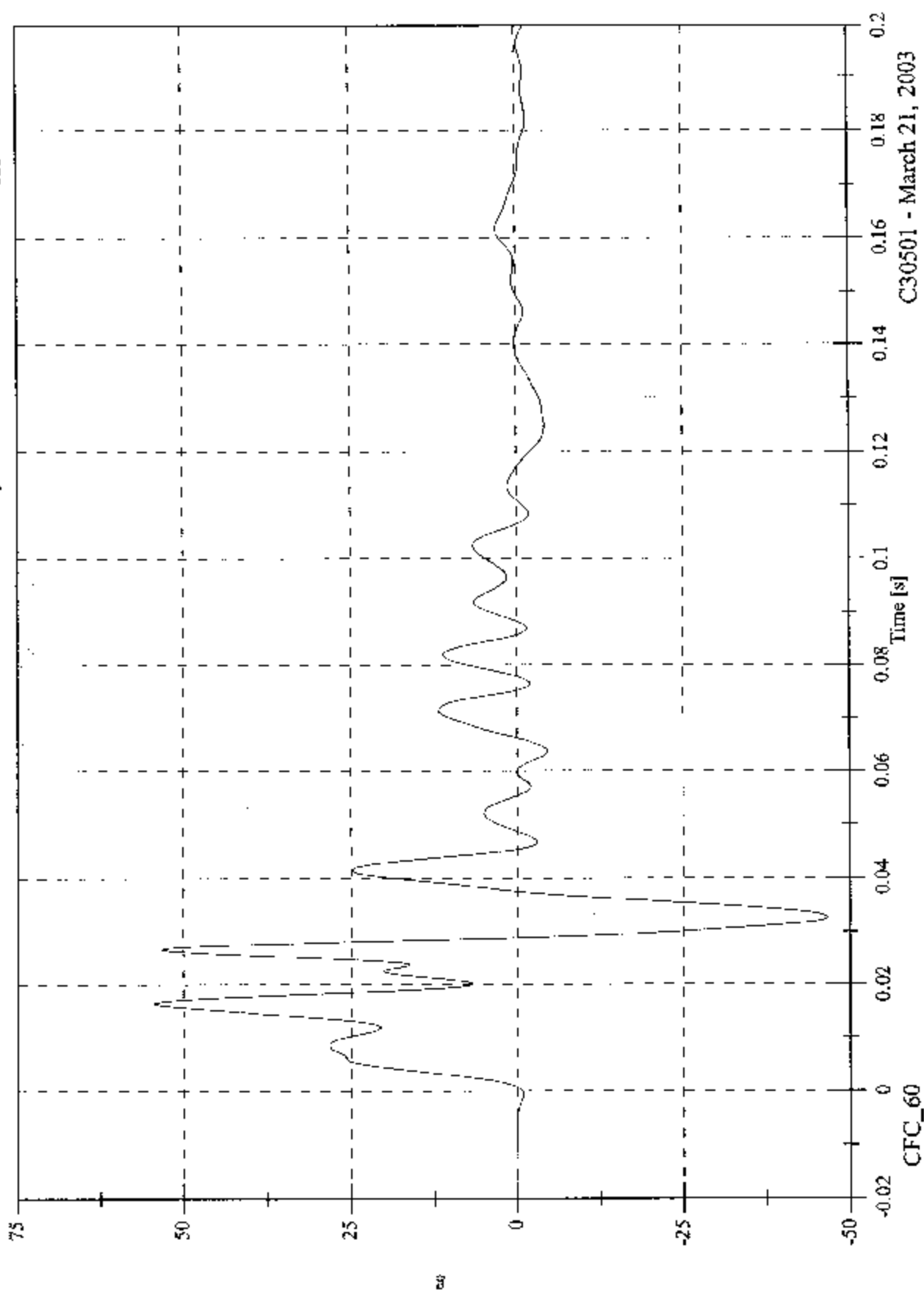


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A15 Left Mid A Post y

Max: 54.4 [g] at 0.017 [s]
Min: -46.6 [g] at 0.032 [s]



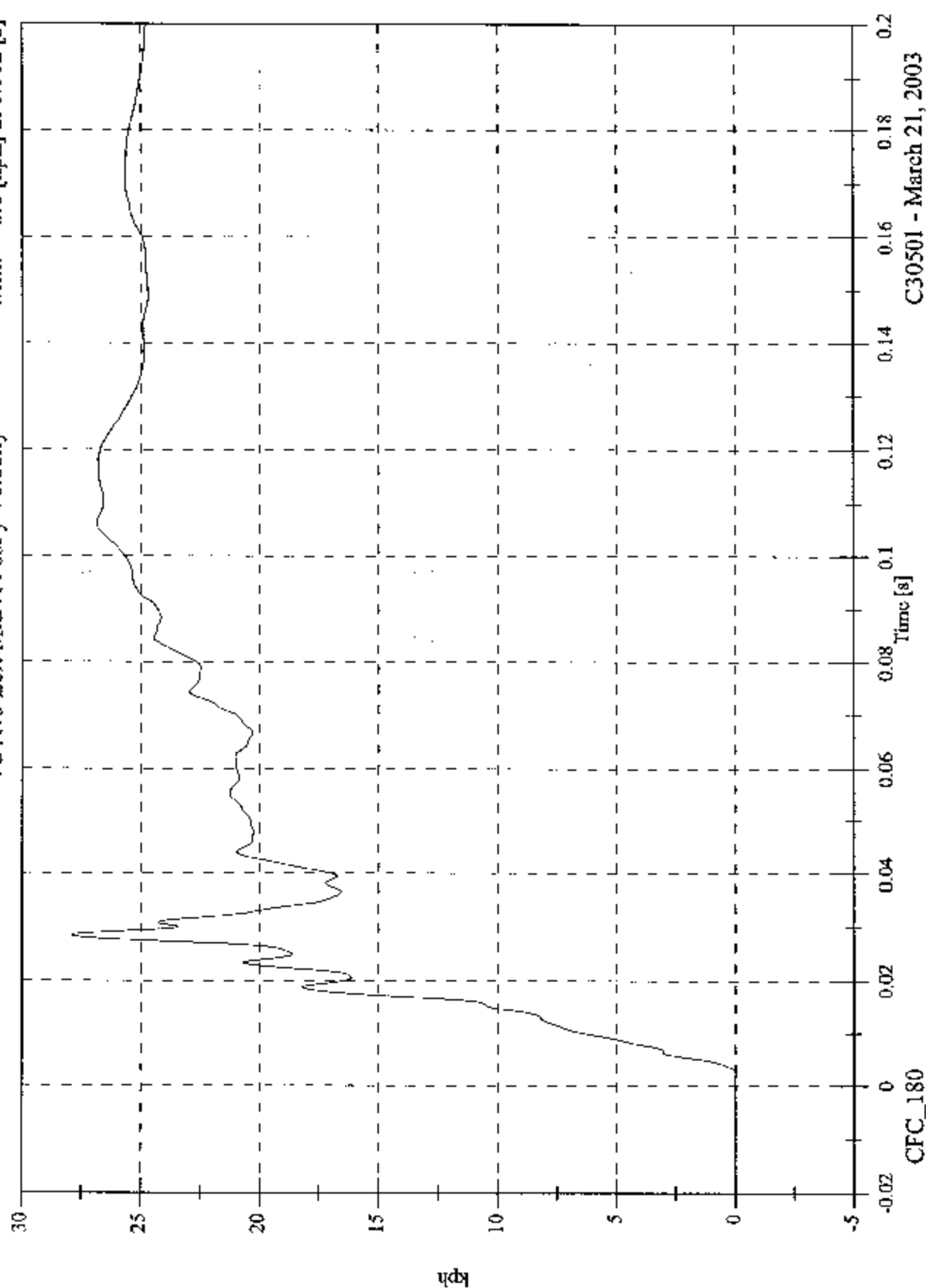
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A15 Left Mid A Post y Velocity

Max: 27.9 [kph] at 0.028 [s]

Min: -0.0 [kph] at 0.002 [s]

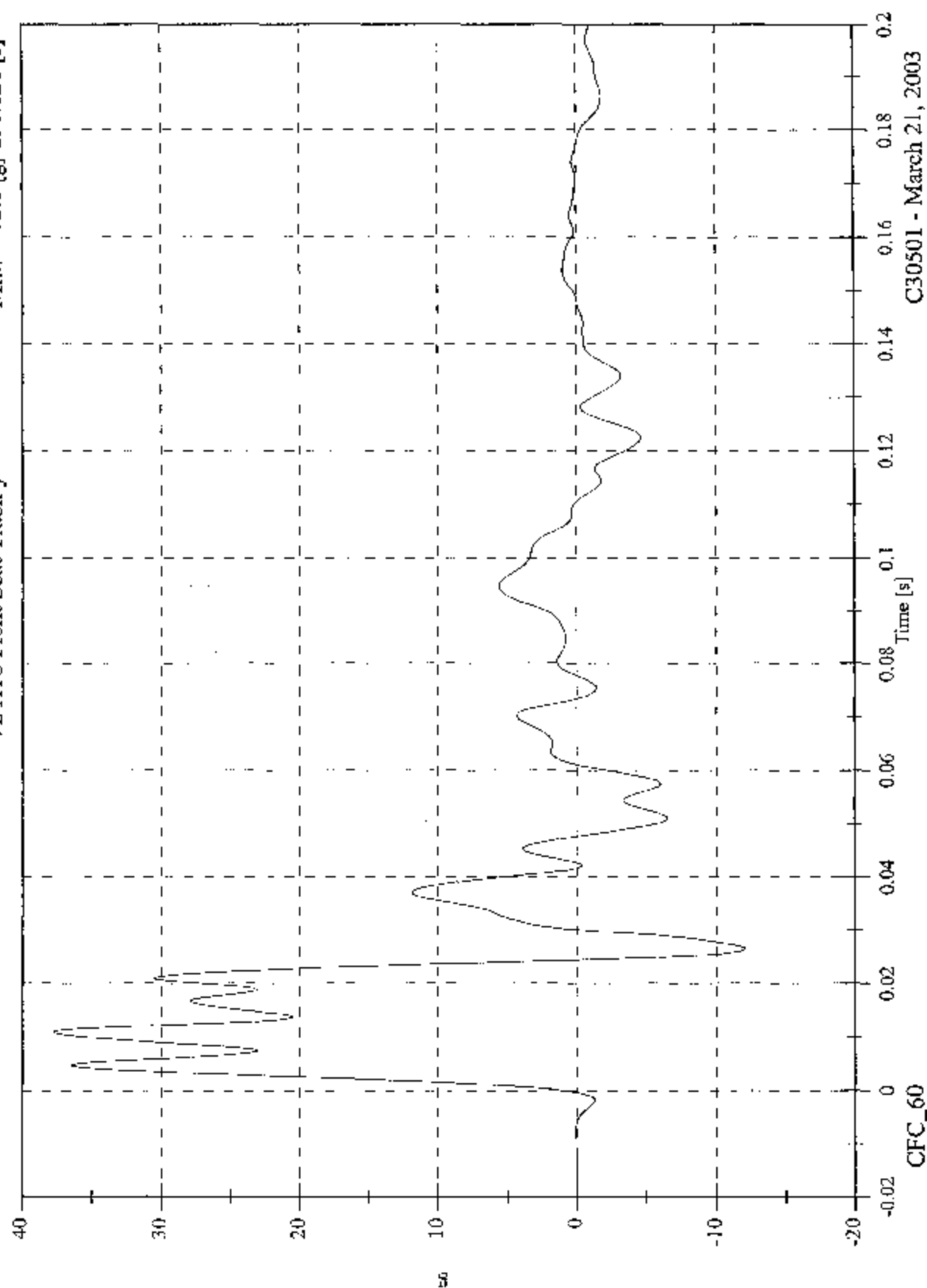


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A16 Front Seat Track y

Max: 37.7 [g] at 0.011 [s]
Min: -12.0 [g] at 0.026 [s]



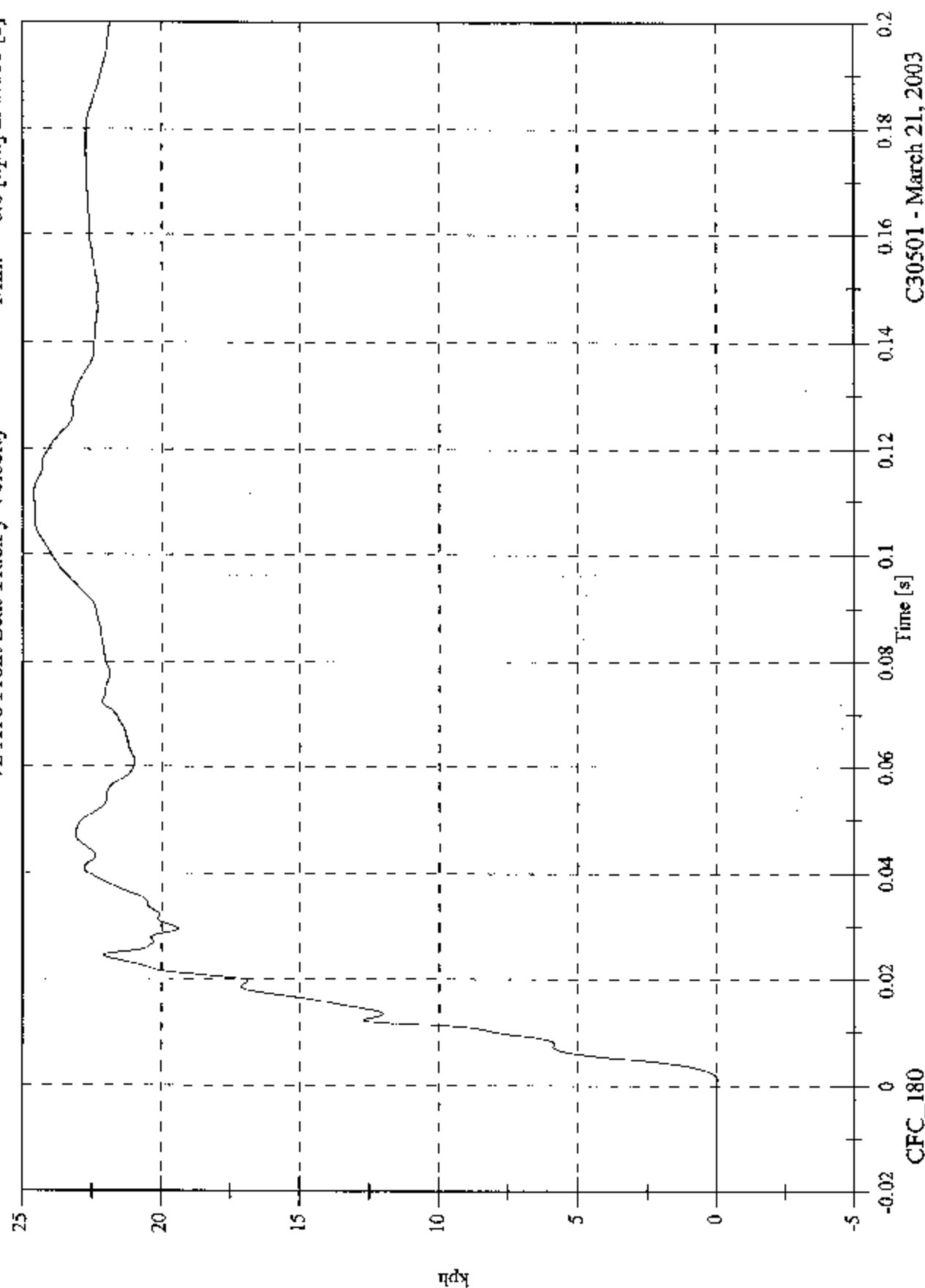
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 24.6 [kph] at 0.111 [s]

Min: -0.0 [kph] at 0.001 [s]

V2 A16 Front Seat Track y Velocity



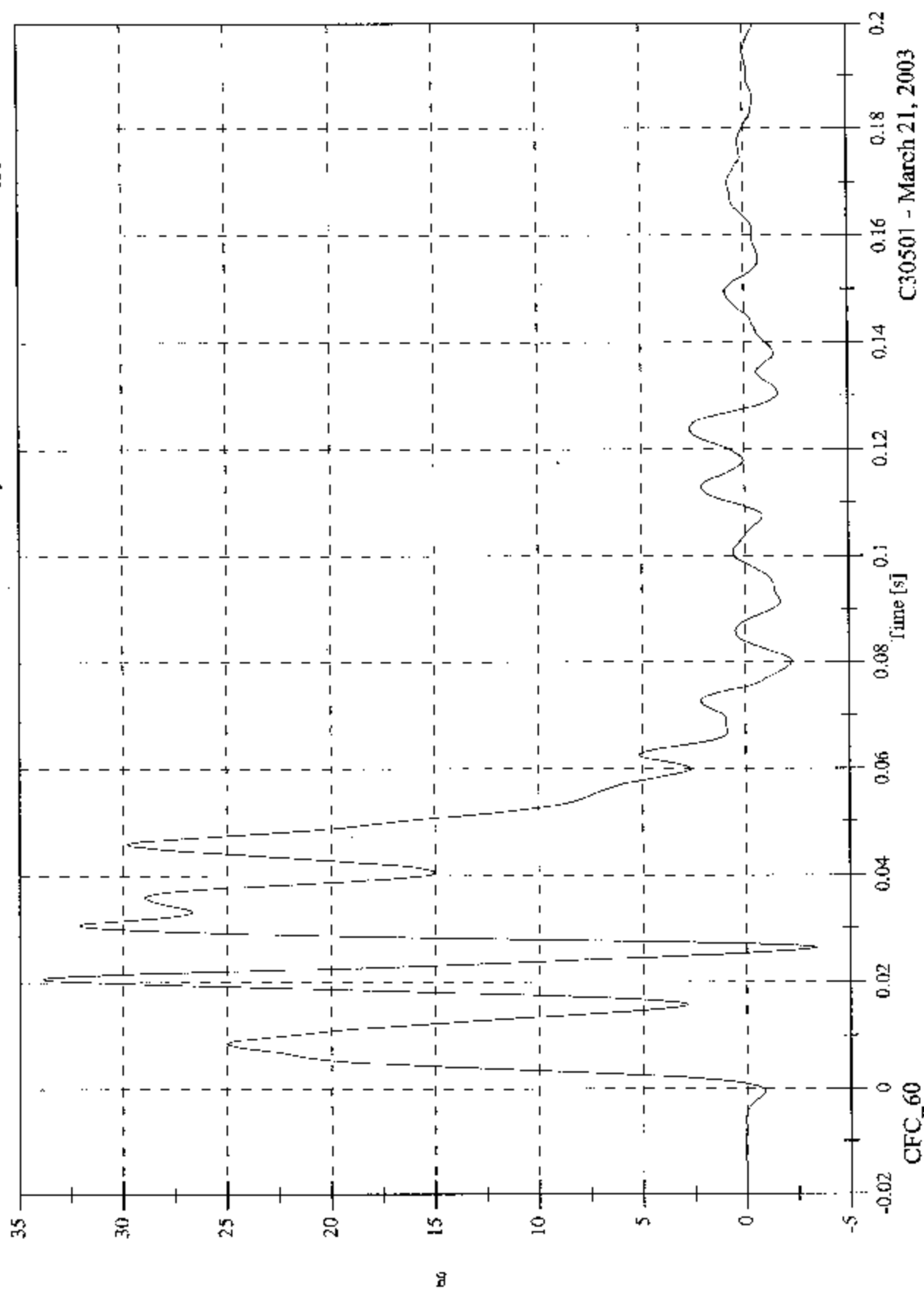
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A17 Rear Seat Track y

Max: 33.9 [g] at 0.021 [s]
Min: -3.4 [g] at 0.026 [s]

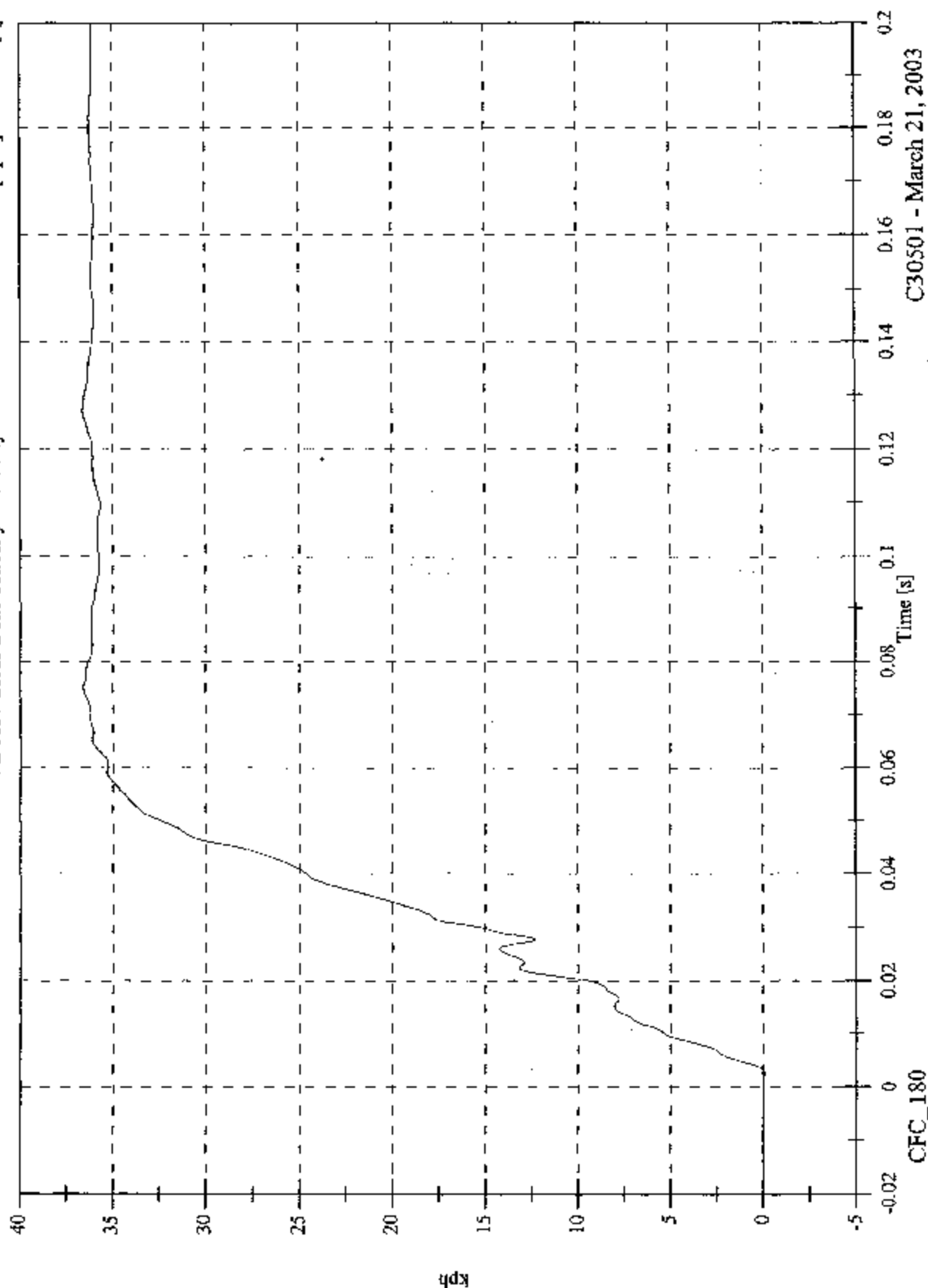


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A17 Rear Seat Track y Velocity

Max: 36.6 [kph] at 0.127 [s]
Min: -0.1 [kph] at 0.003 [s]



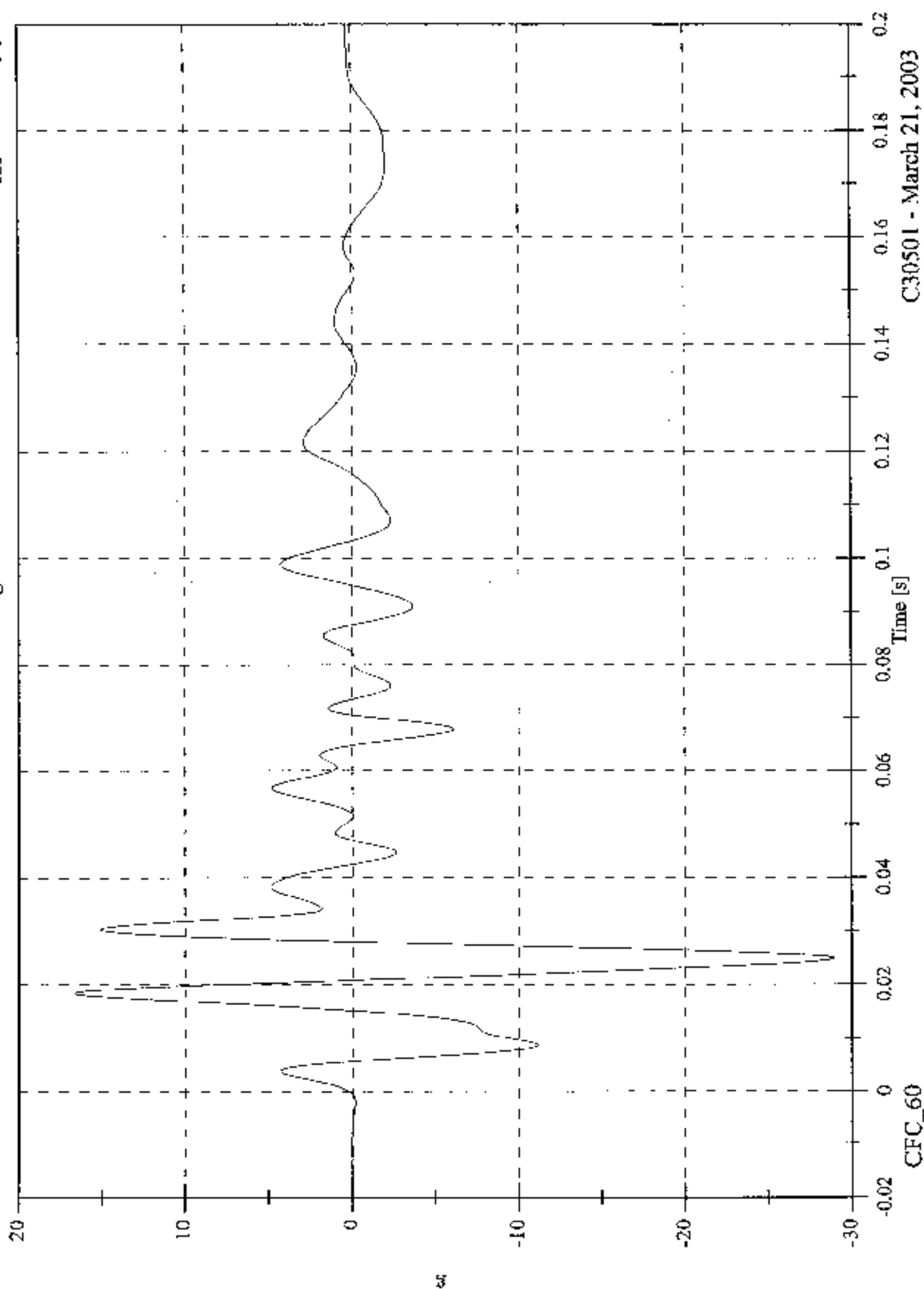
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 16.6 [g] at 0.018 [s]
Min: -28.9 [g] at 0.025 [s]

V2 A18 Target CG x

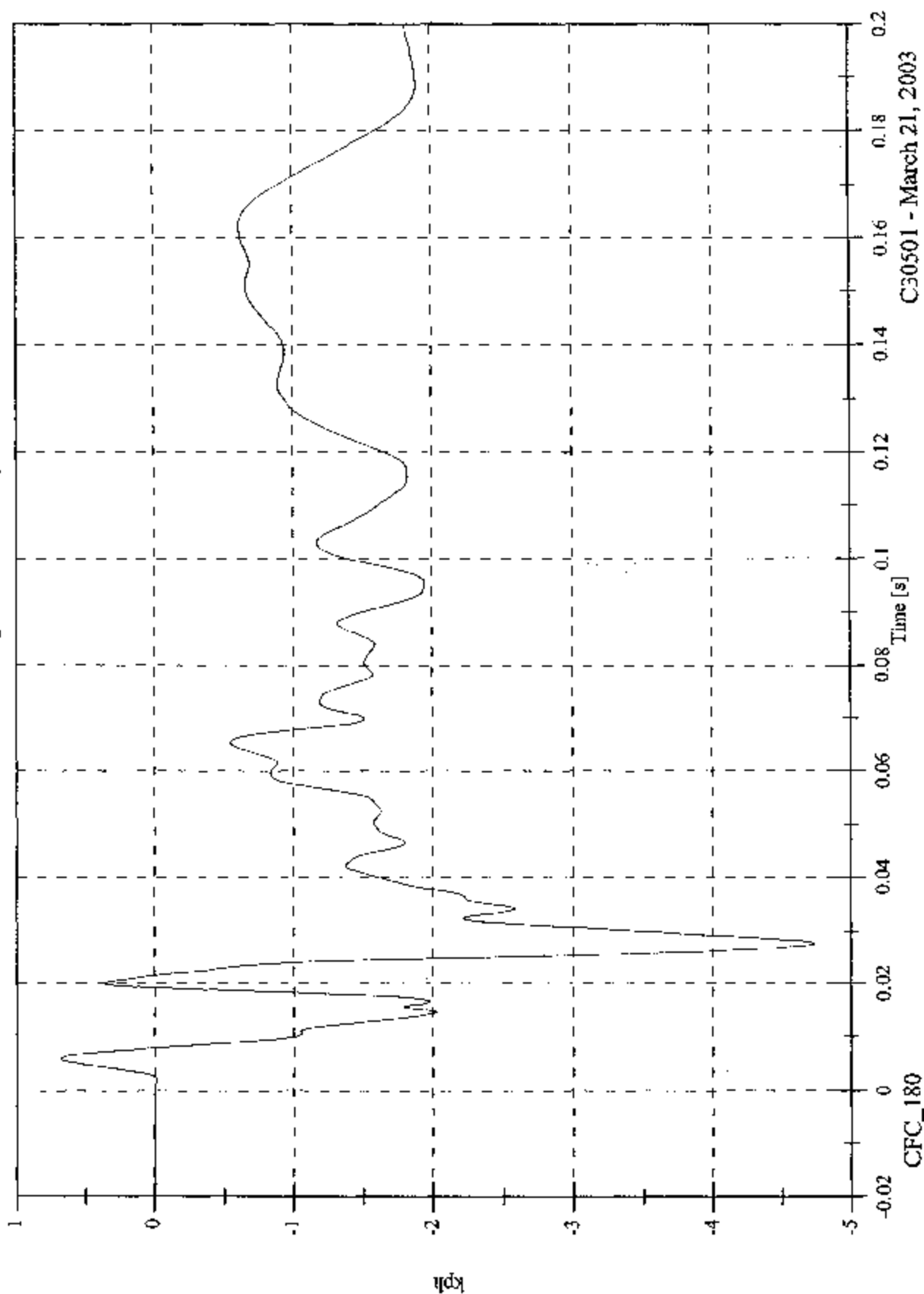


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A18 Target CG x Velocity

Max: 0.7 [kph] at 0.006 [s]
Min: -4.7 [kph] at 0.028 [s]



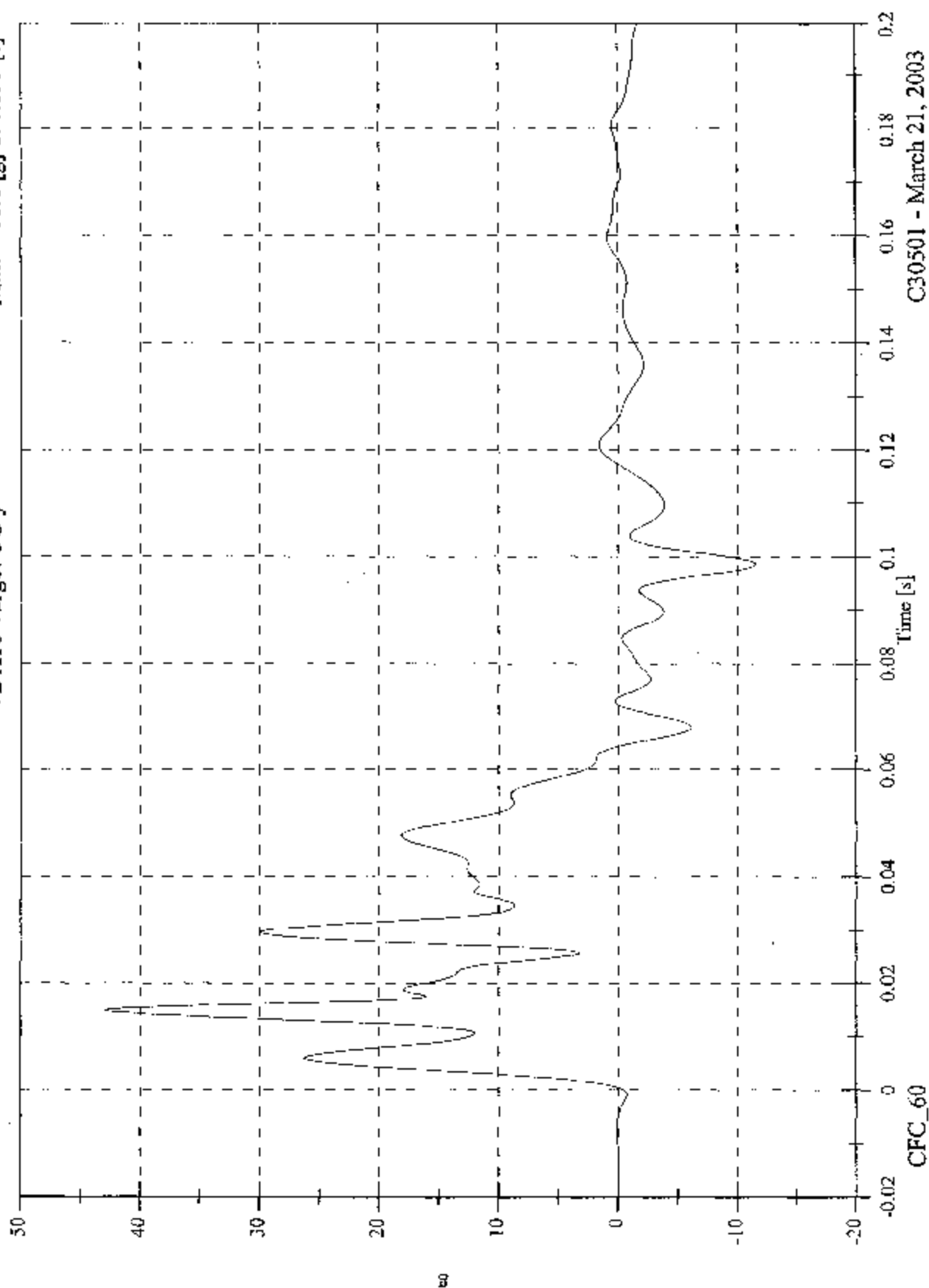
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A18 Target CG y

Max: 42.9 [g] at 0.015 [s]
Min: -11.6 [g] at 0.099 [s]



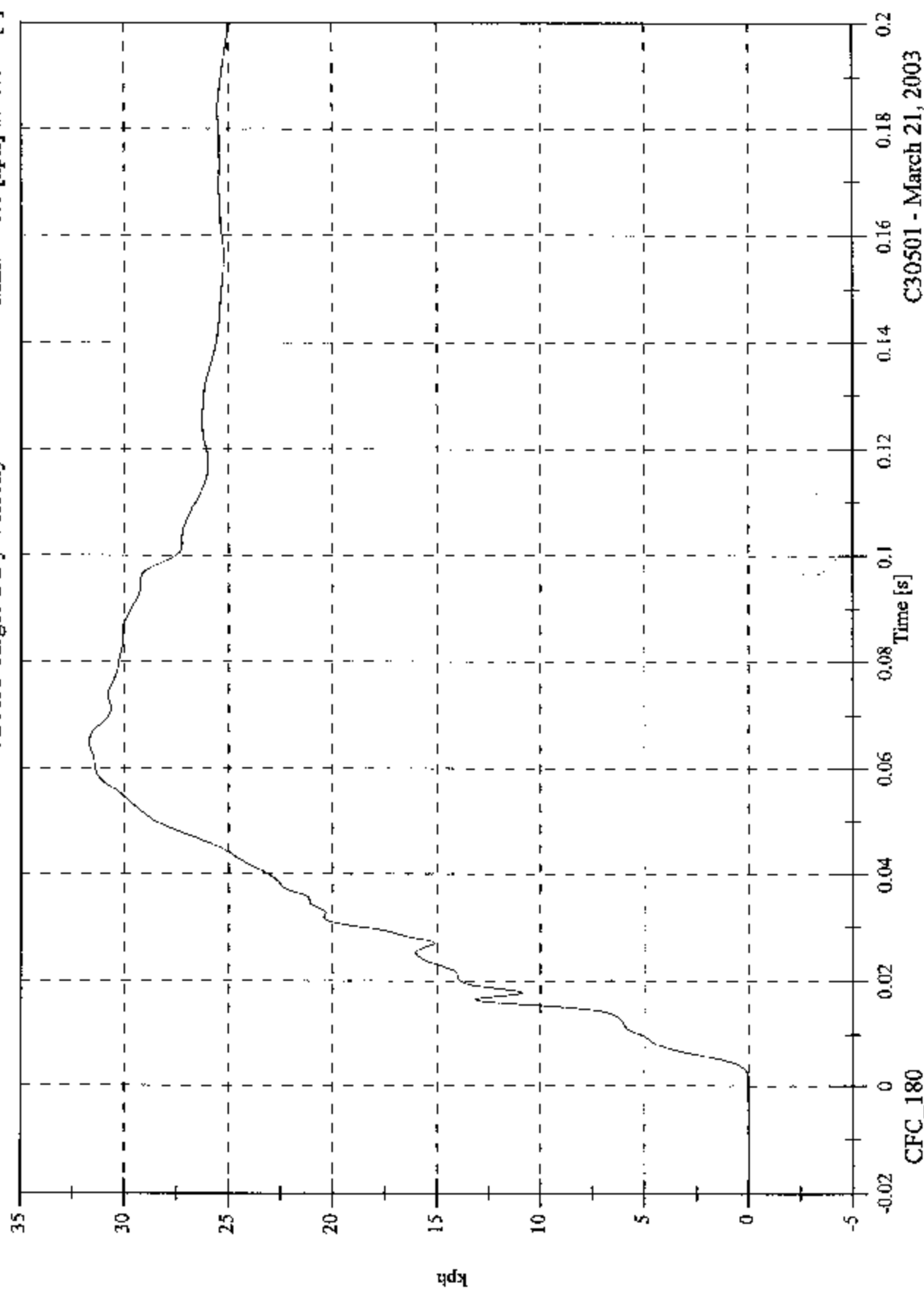
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 31.7 [kph] at 0.065 [s]

Min: -0.0 [kph] at -0.020 [s]

V2 A18 Target CG y Velocity



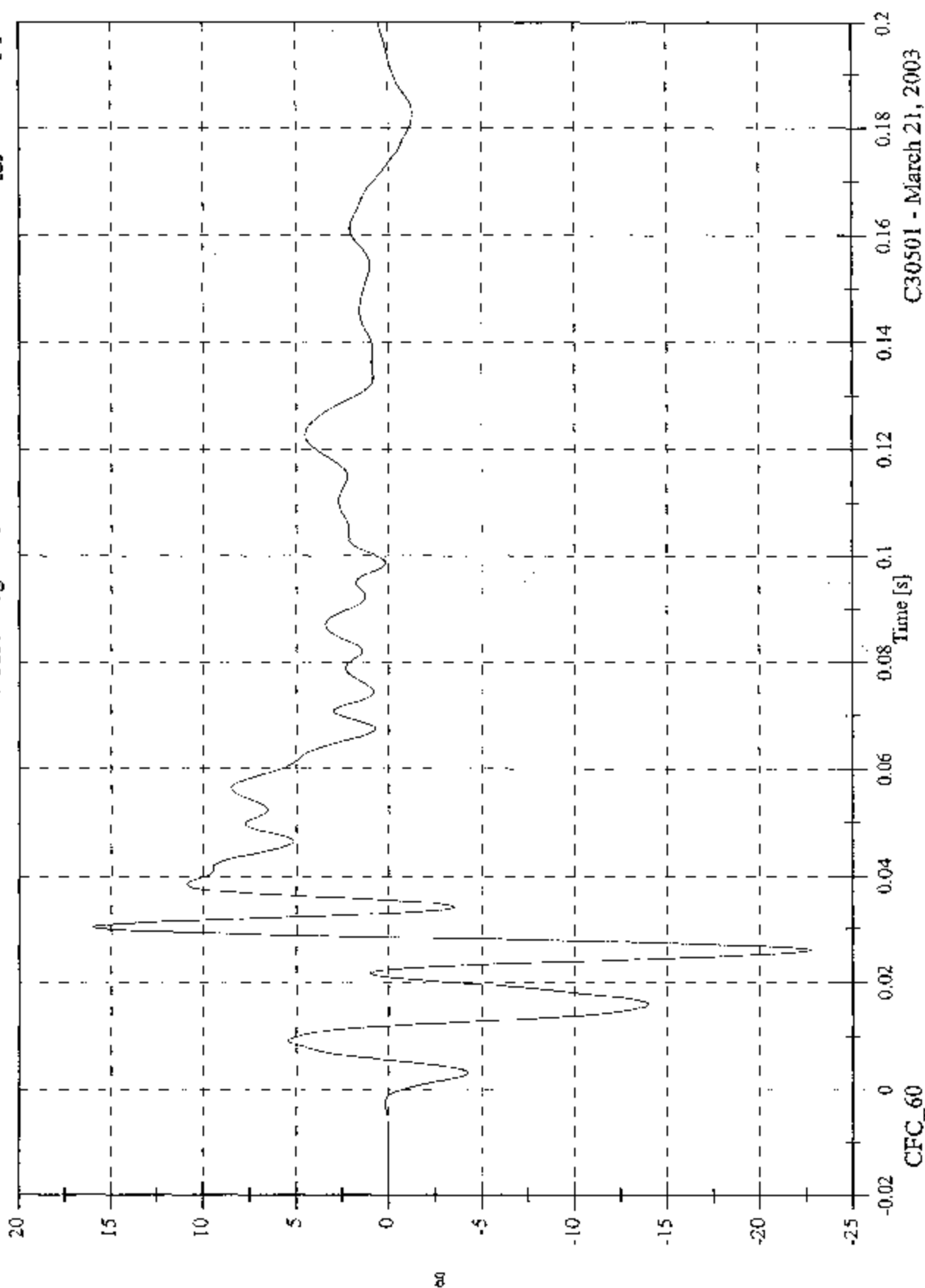
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 16.0 [g] at 0.030 [s]

Min: -22.8 [g] at 0.026 [s]

V2 A18 Target CG z

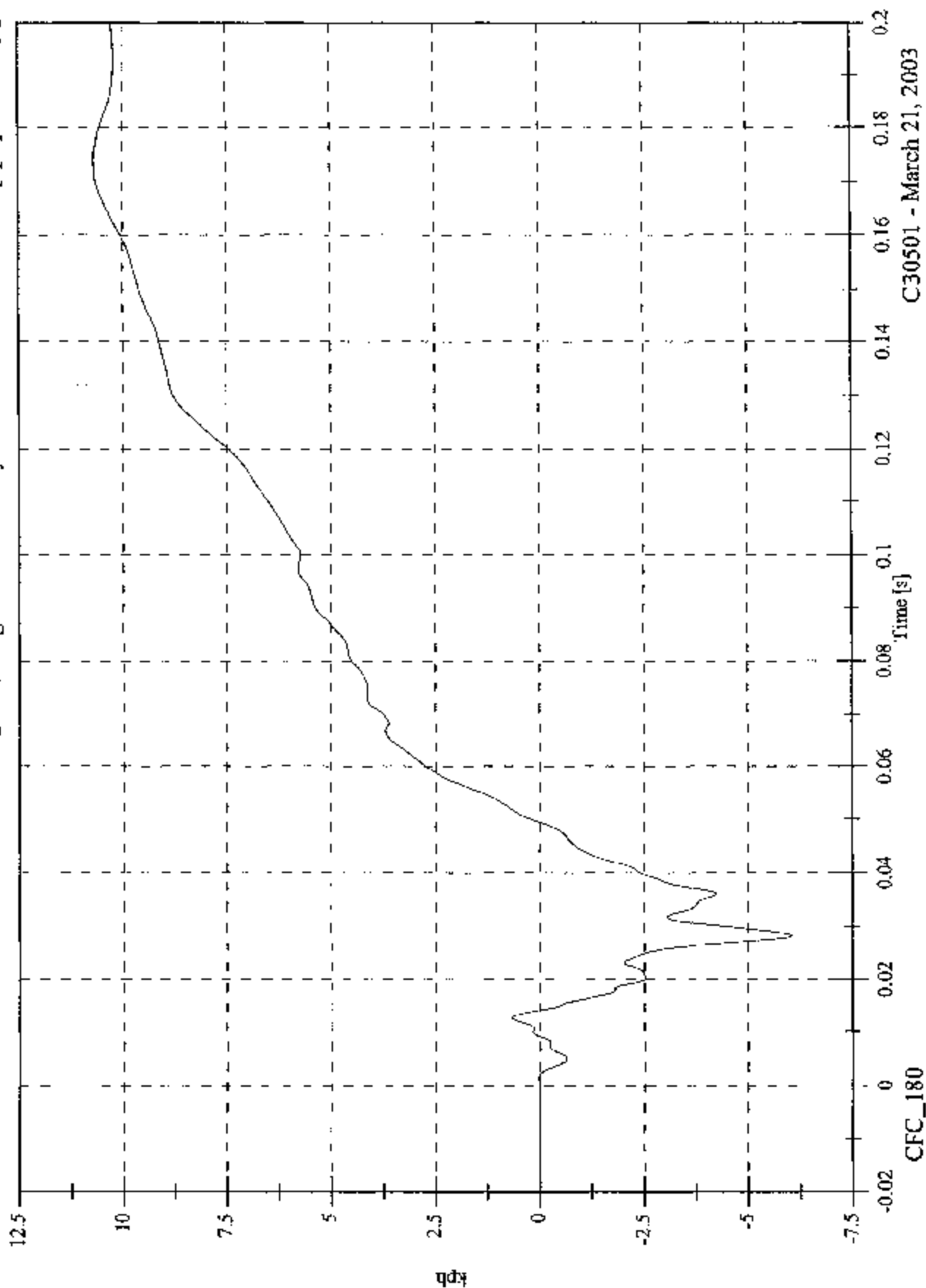


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A18 Target CG z Velocity

Max: 10.7 [kph] at 0.174 [s]
Min: -6.0 [kph] at 0.028 [s]



CFC_180

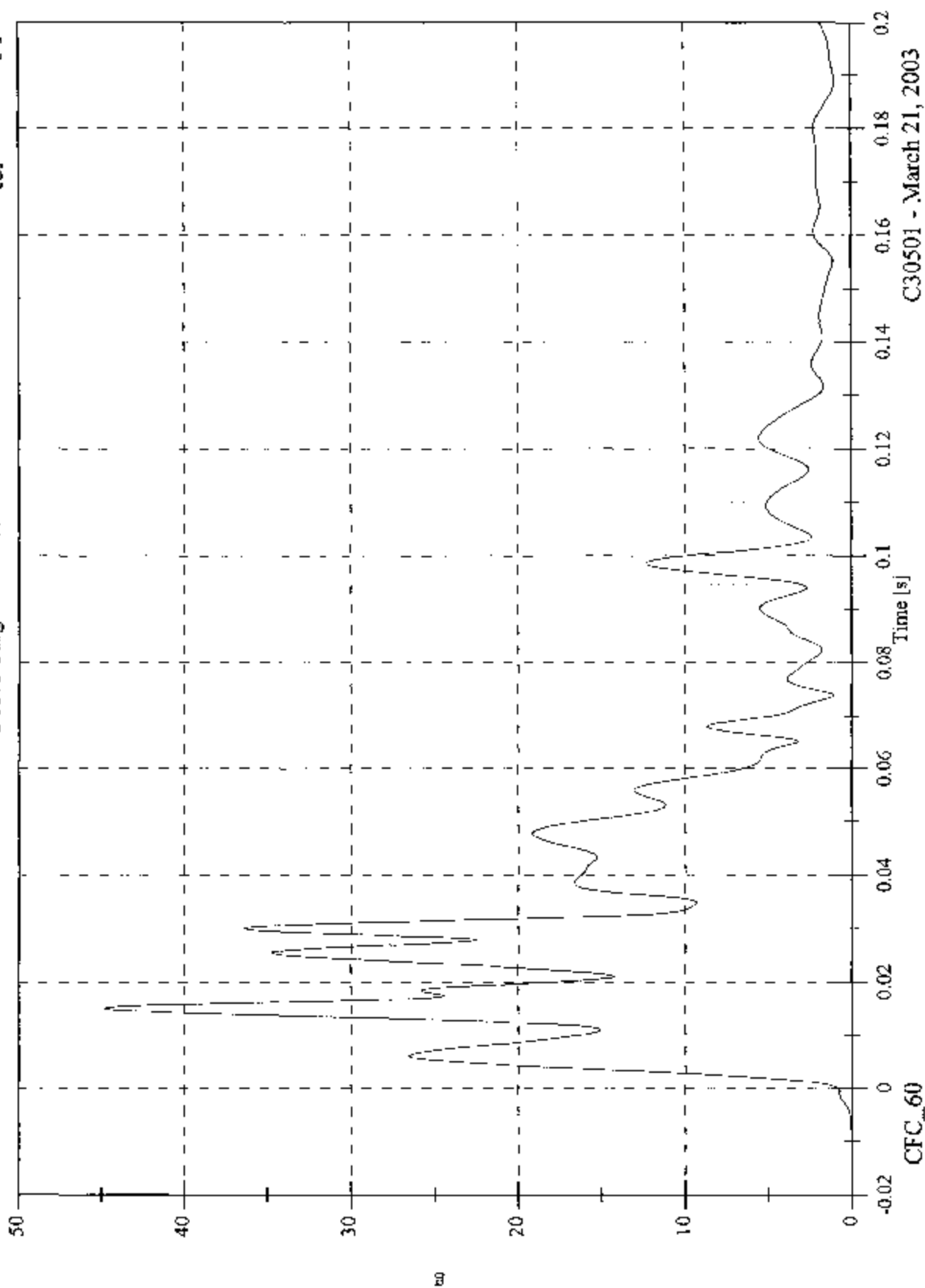
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2 A18 Target CG Resultant

Max: 44.8 [g] at 0.015 [s]

Min: 0.0 [g] at -0.020 [s]

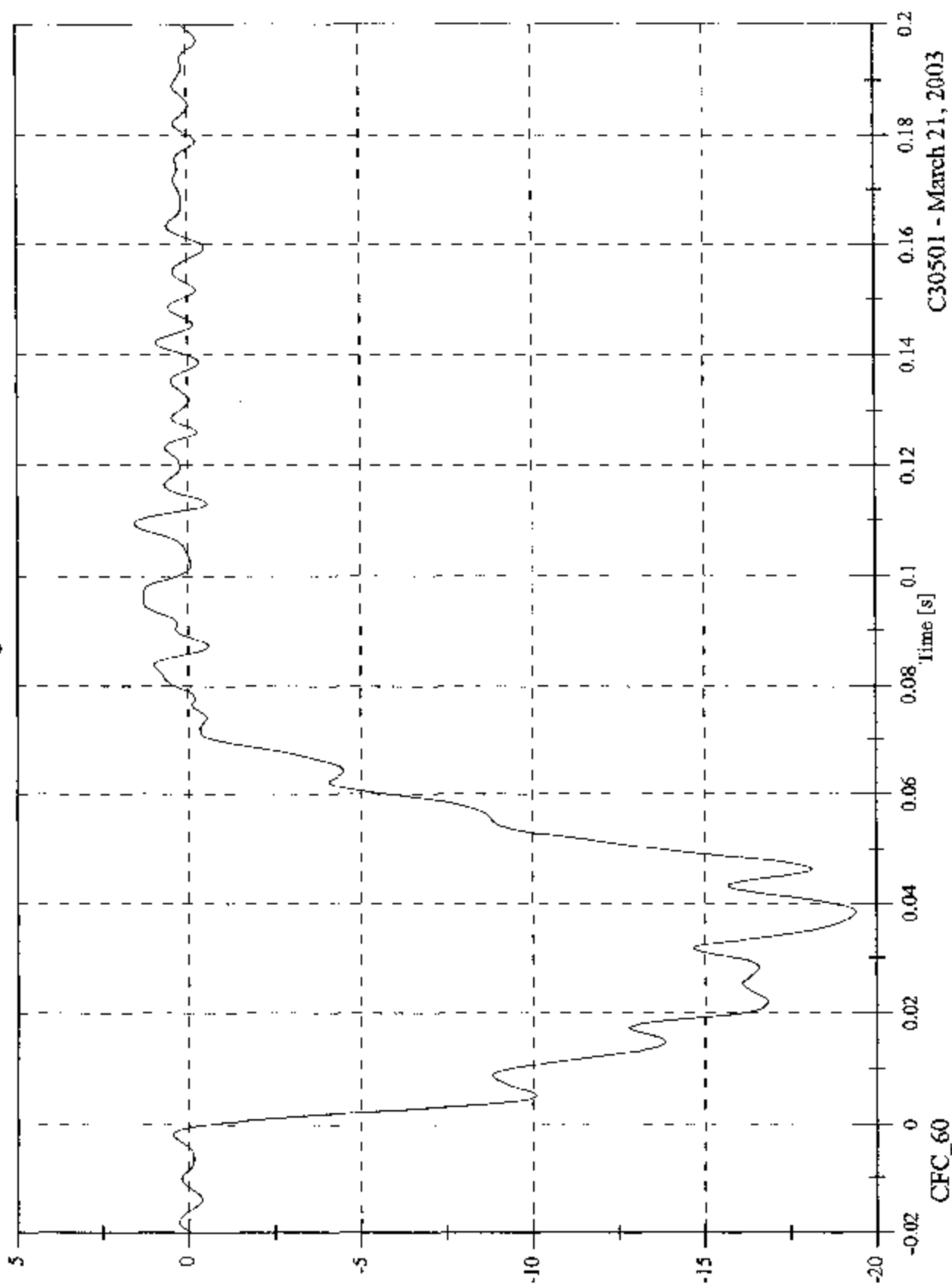


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V1 Moving Barrier CGX

Max: 1.6 [g] at 0.109 [s]
Min: -19.4 [g] at 0.039 [s]

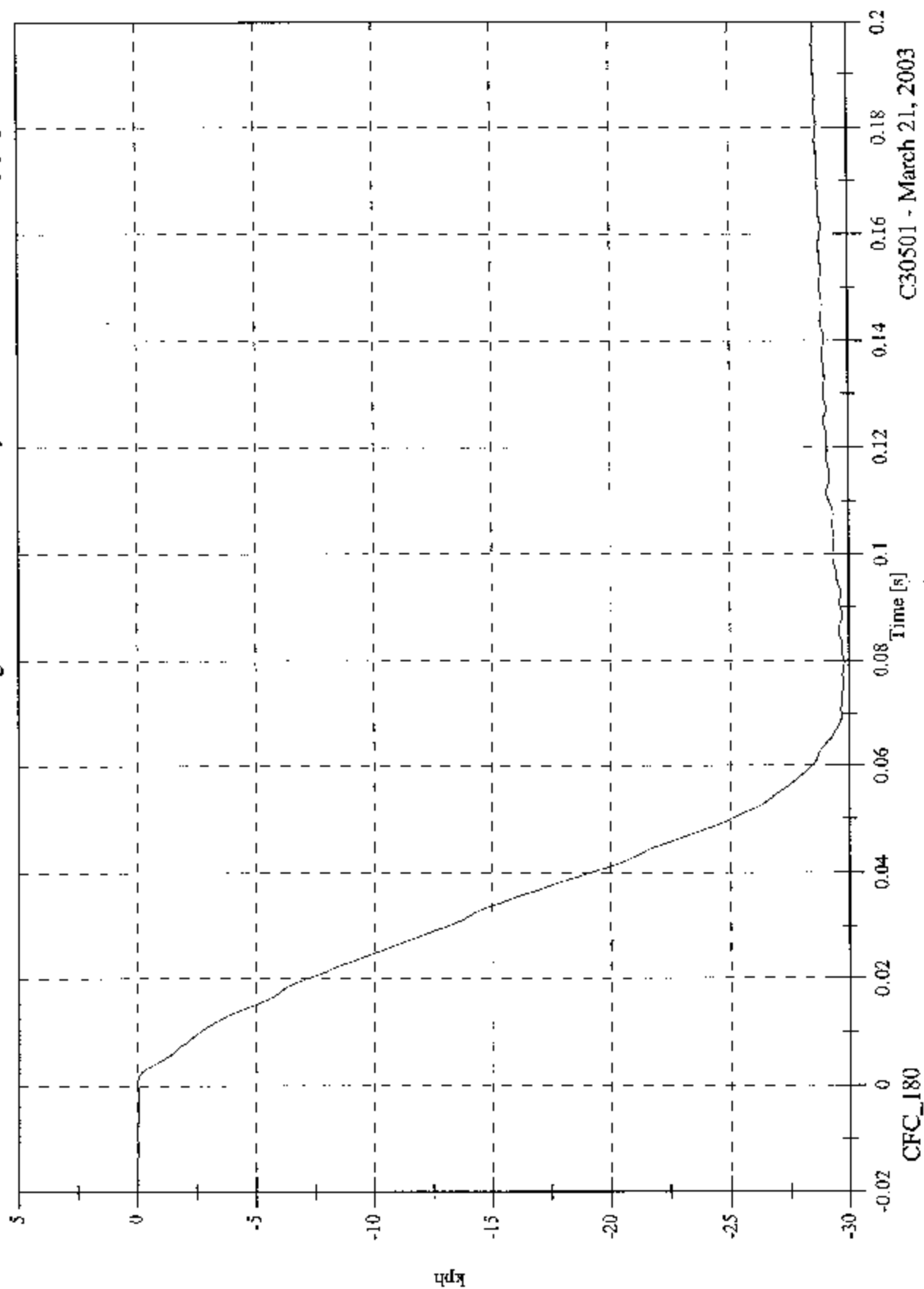


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 0.0 [kph] at -0.015 [s]
Min: -29.8 [kph] at 0.080 [s]

V1 Moving Barrier CG X Velocity

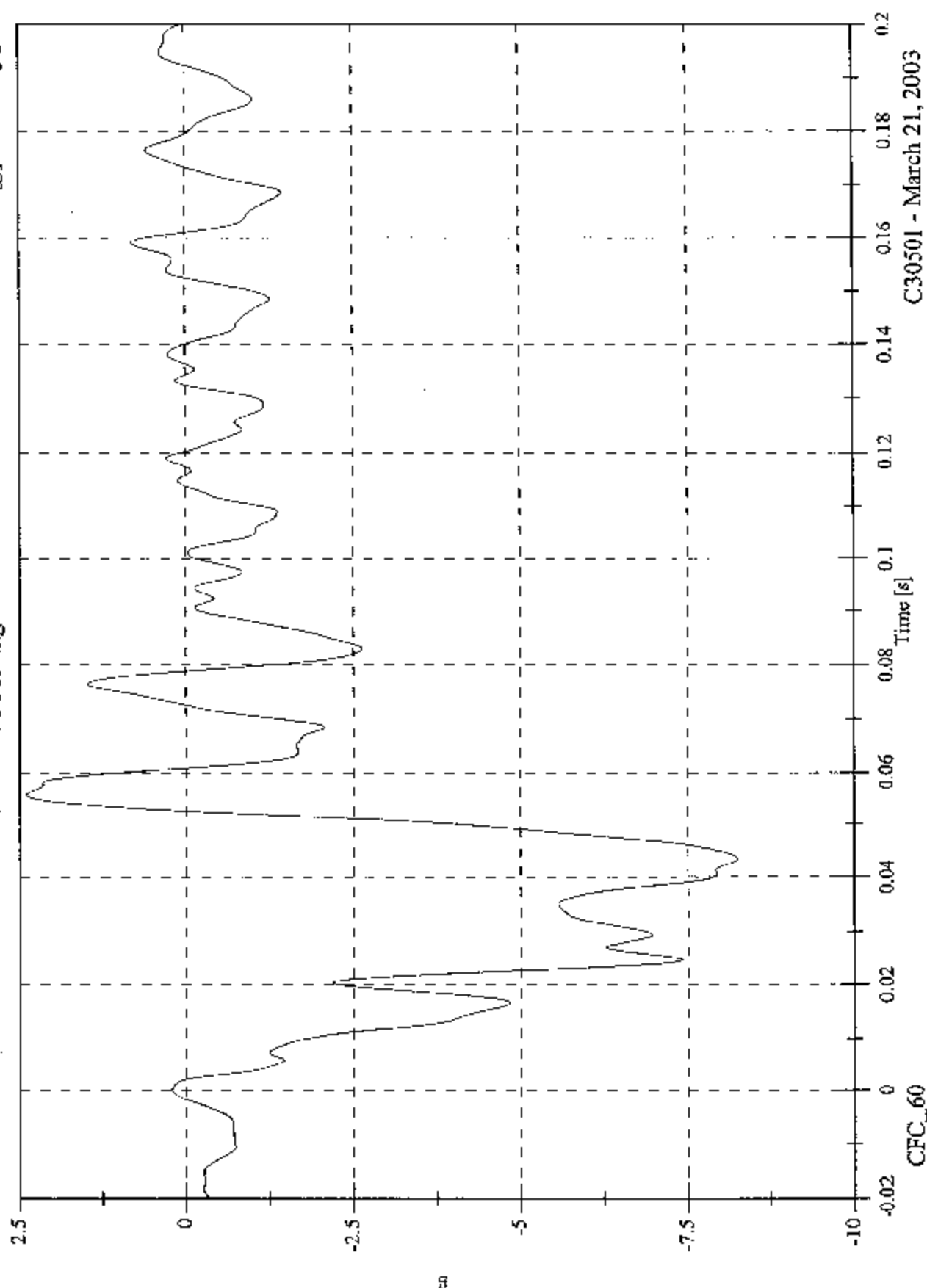


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V1 Moving Barrier CG Y

Max: 2.4 [g] at 0.056 [s]
Min: -8.3 [g] at 0.044 [s]

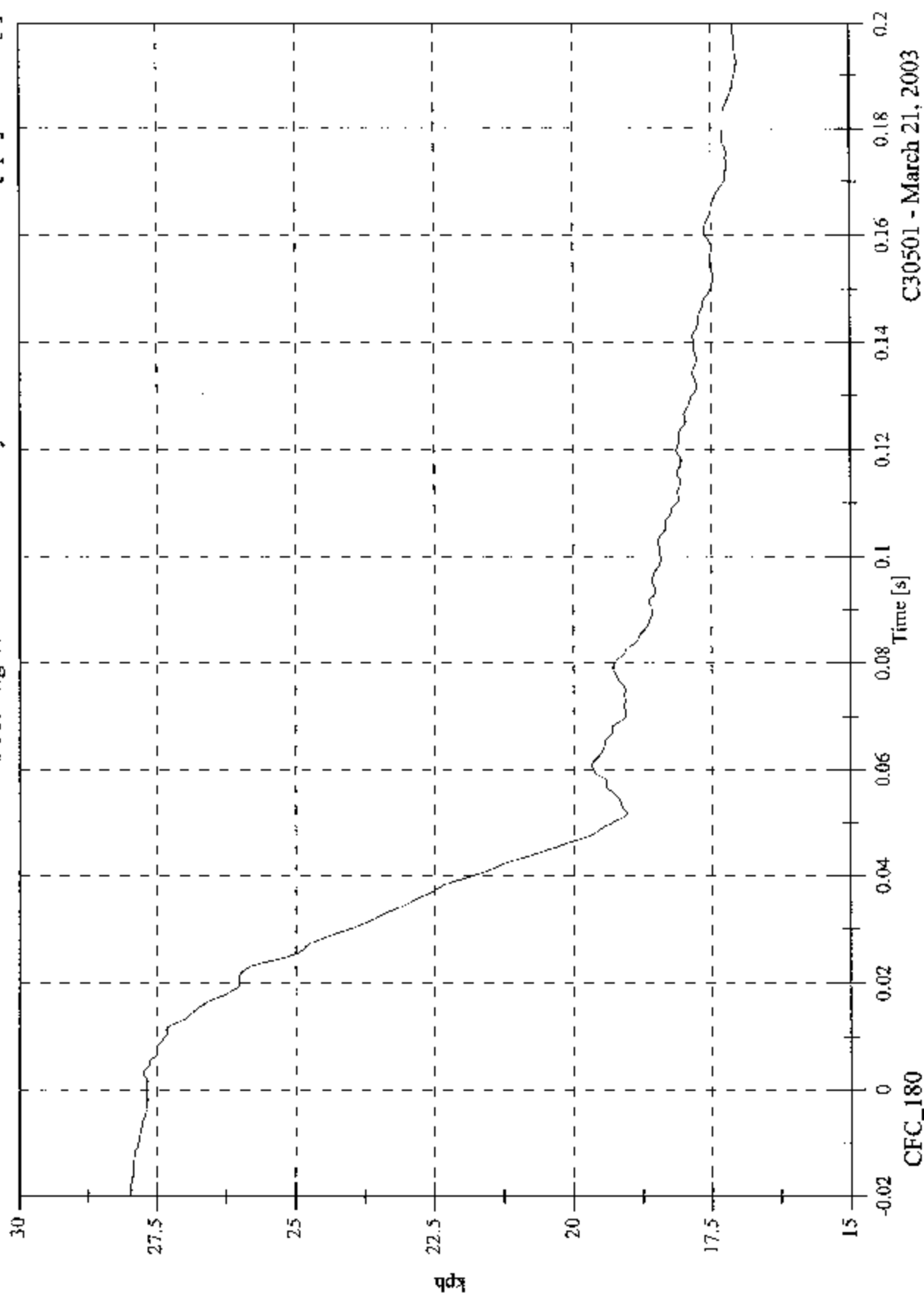


C30501 - March 21, 2003

2003 FMYSS 214D Test 4 2003 Hyundai Accent

V1 Moving Barrier CG Y Velocity

Max: 28.0 [kph] at -0.020 [s]
Min: 17.0 [kph] at 0.193 [s]

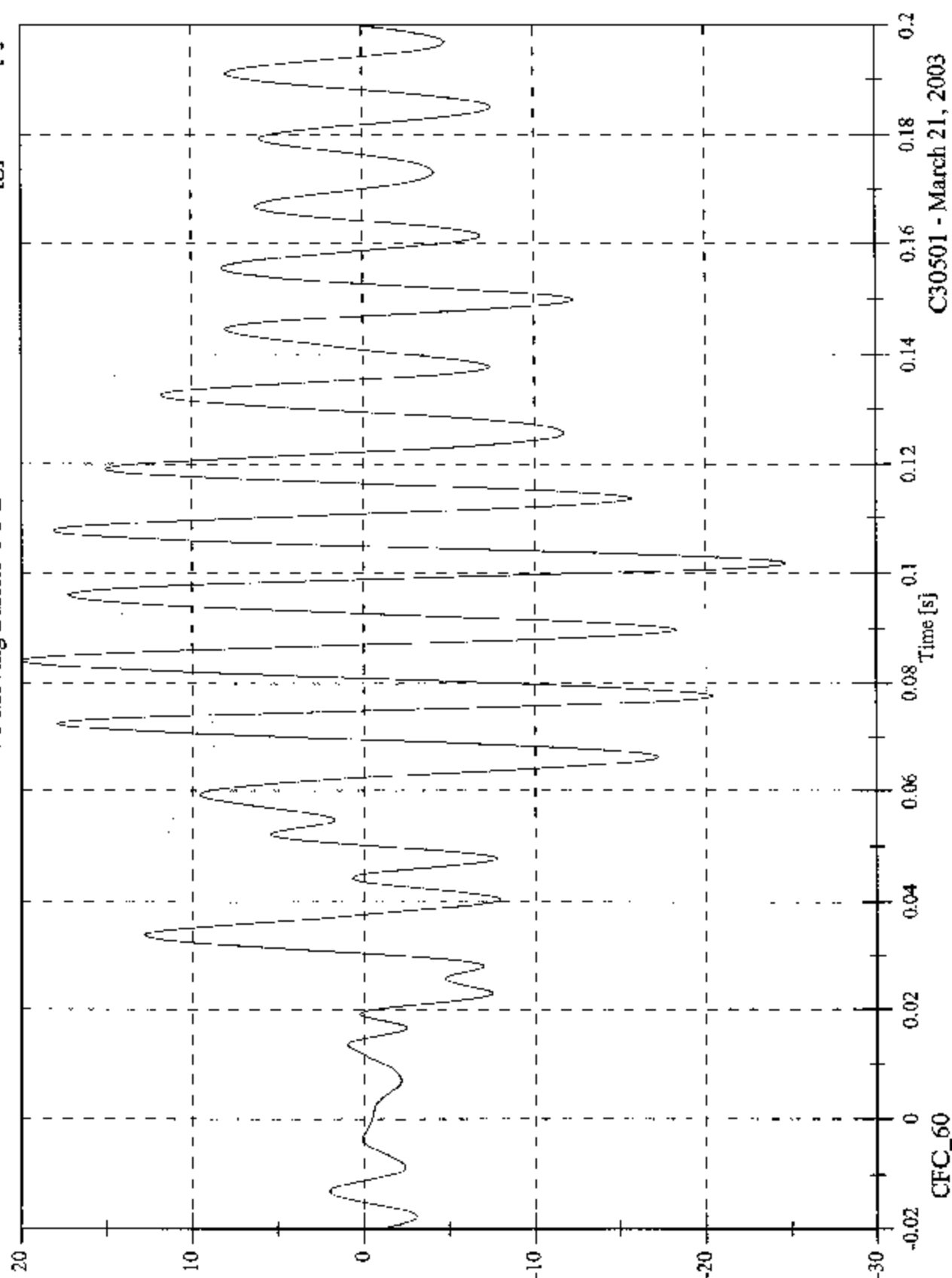


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V1 Moving Barrier CG Z

Max: 20.0 [g] at 0.084 [s]
Min: -24.7 [g] at 0.102 [s]

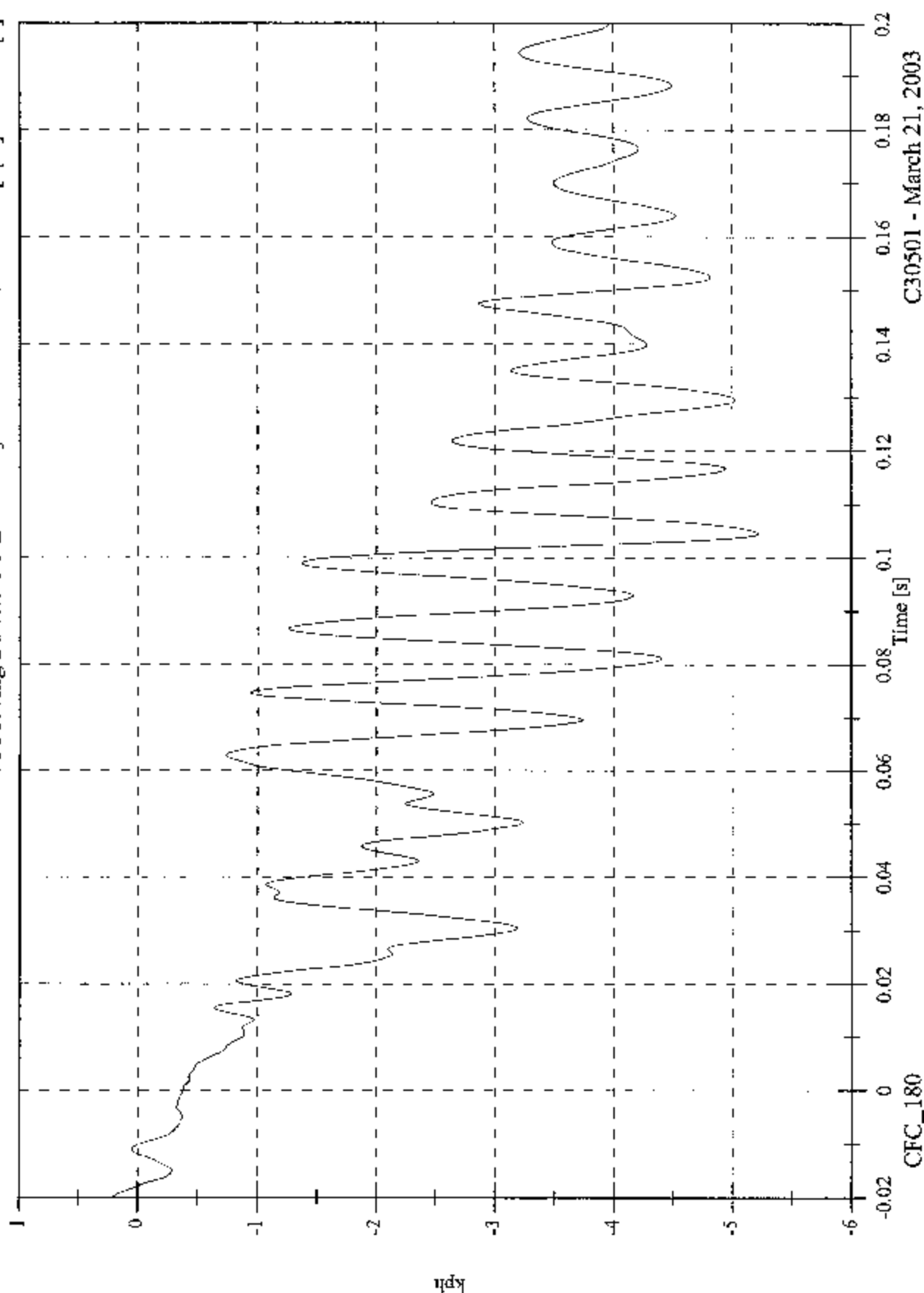


C30501 - March 21, 2003

2003 FMOVSS 214D Test 4 2003 Hyundai Accent

V1 Moving Barrier CG Z Velocity

Max: 0.2 [kph] at -0.020 [s]
Min: -5.2 [kph] at 0.105 [s]

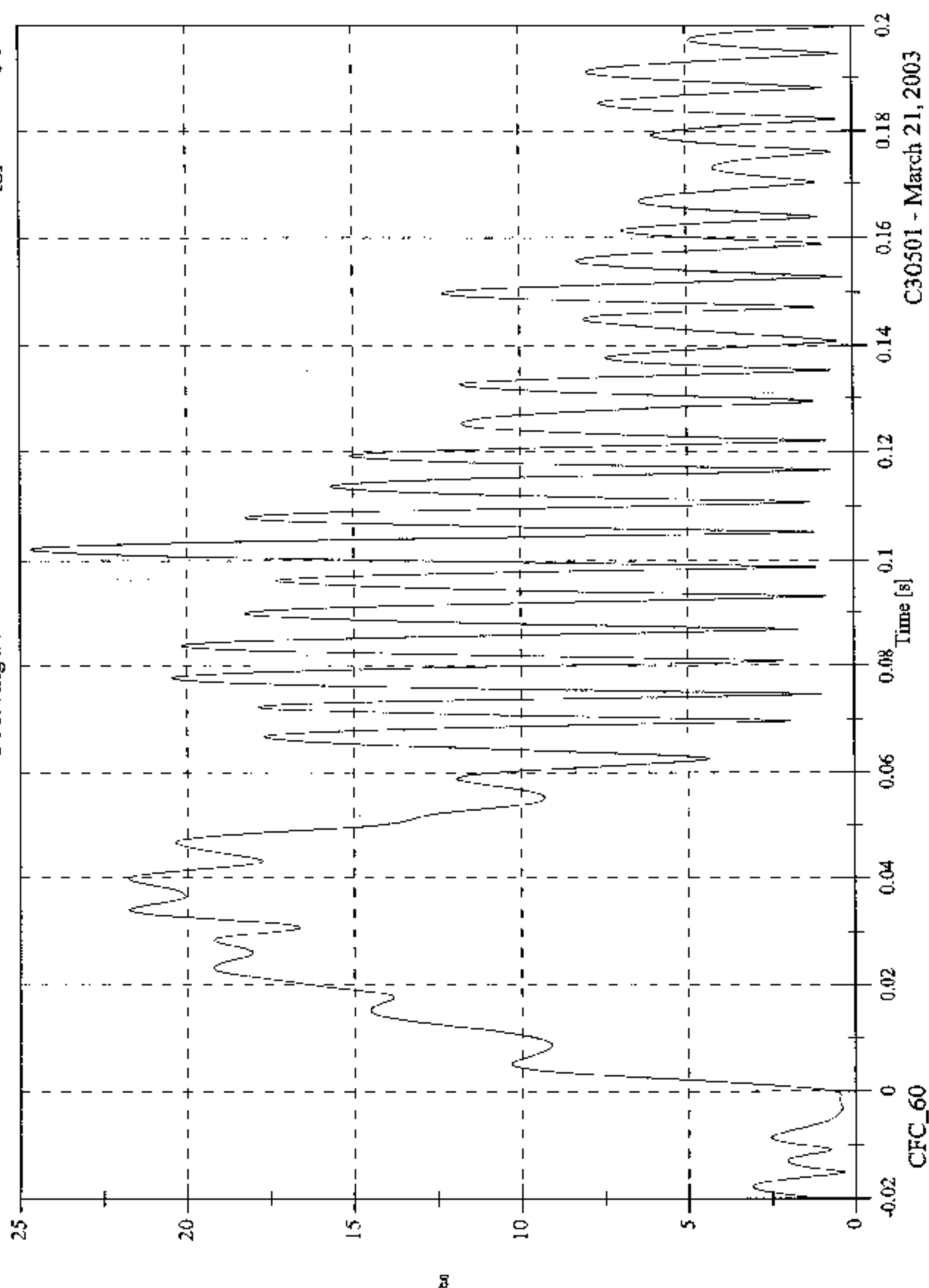


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 24.7 [g] at 0.102 [s]
Min: 0.2 [g] at 0.200 [s]

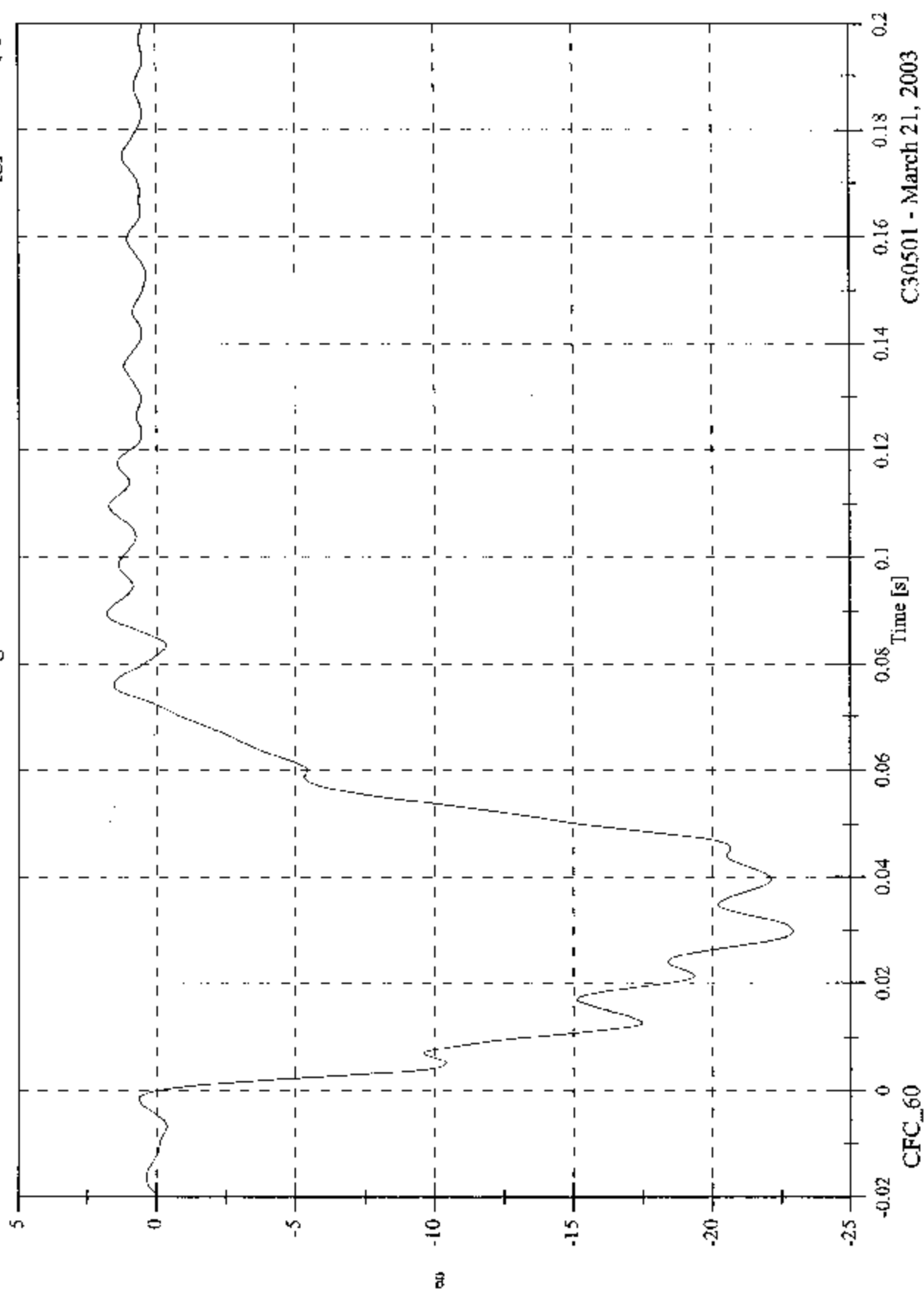
V1 Moving Barrier CG Resultant



2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 1.8 [g] at 0.090 [s]
Min: -22.9 [g] at 0.030 [s]

V1 Moving Barrier Left Rail X

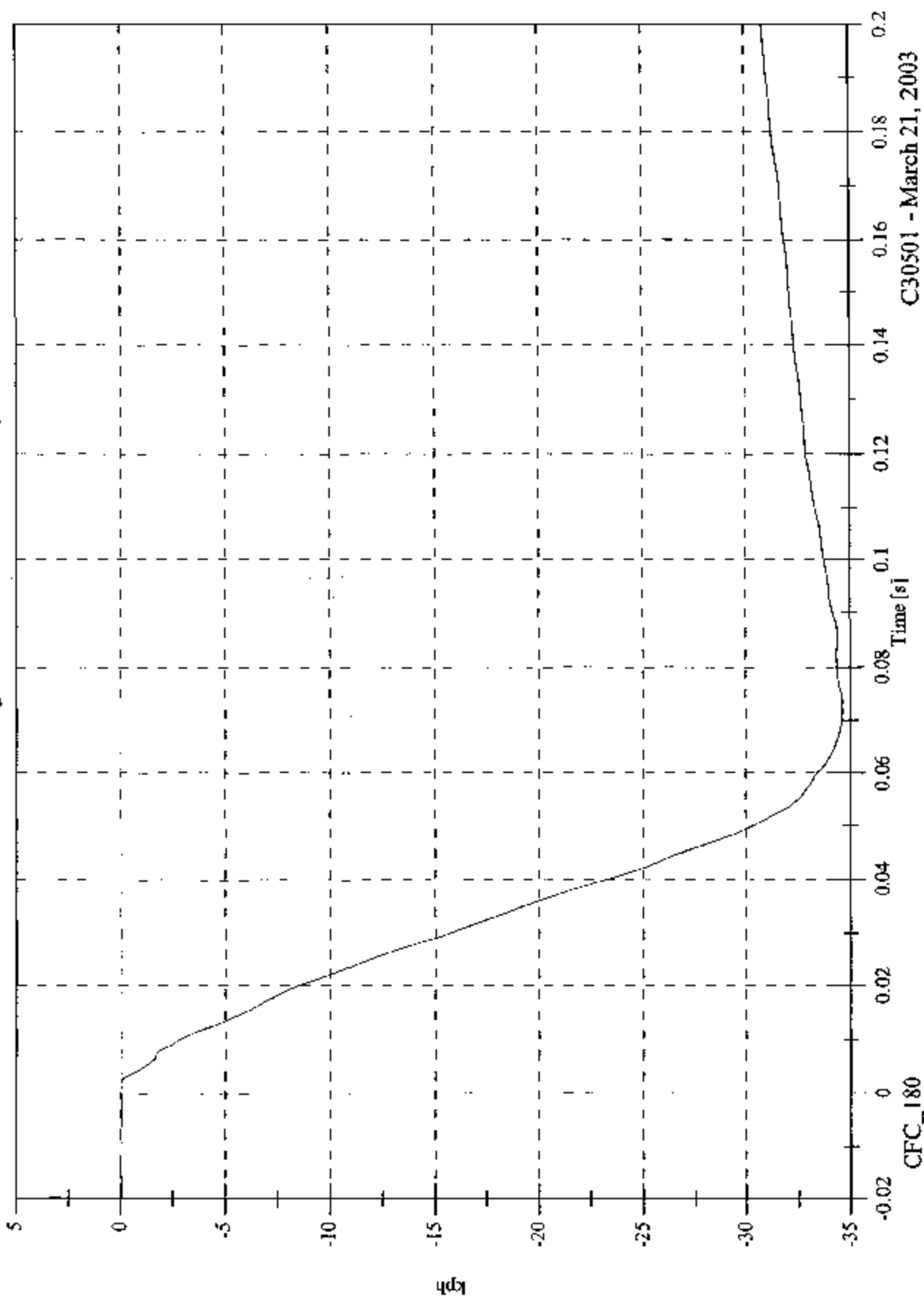


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V1 Moving Barrier Left Rail X Velocity

Max: 0.0 [kph] at -0.013 [s]
Min: -34.6 [kph] at 0.073 [s]

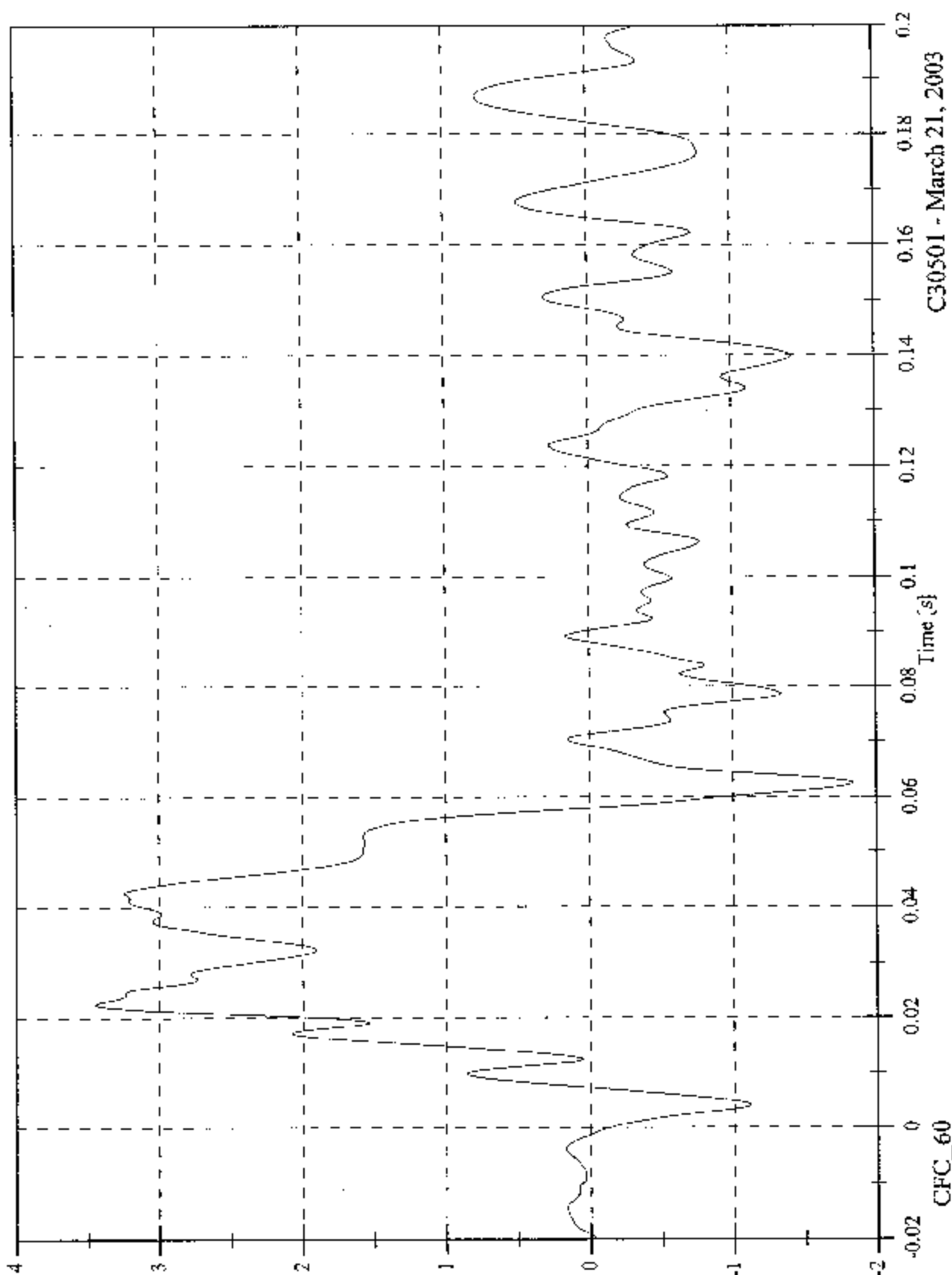


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V1 Moving Barrier Left Rail Y

Max: 3.5 [g] at 0.022 [s]
Min: -1.8 [g] at 0.062 [s]

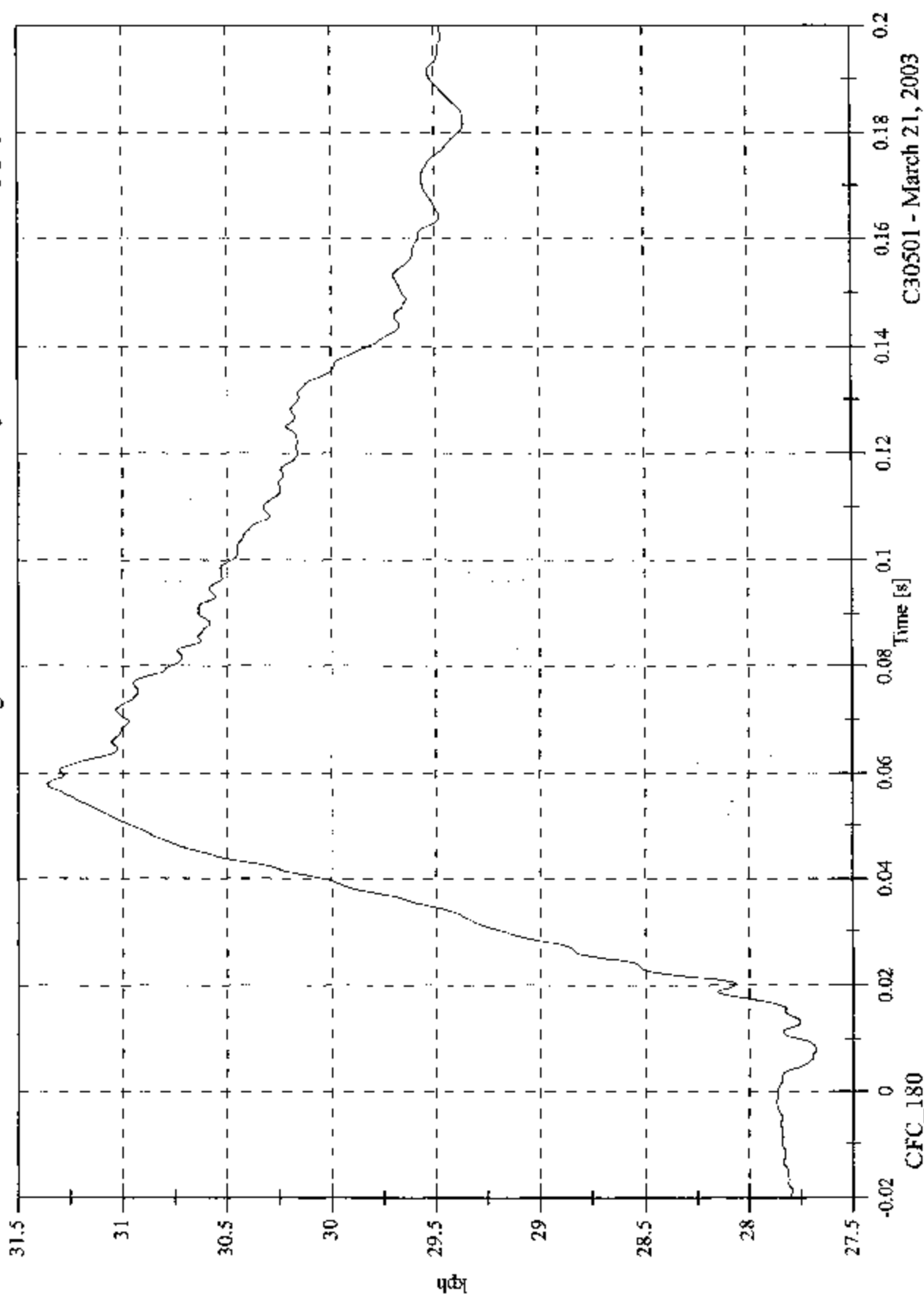


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

VI Moving Barrier Left Rail Y Velocity

Max: 31.4 [kph] at 0.058 [s]
Min: 27.7 [kph] at 0.008 [s]

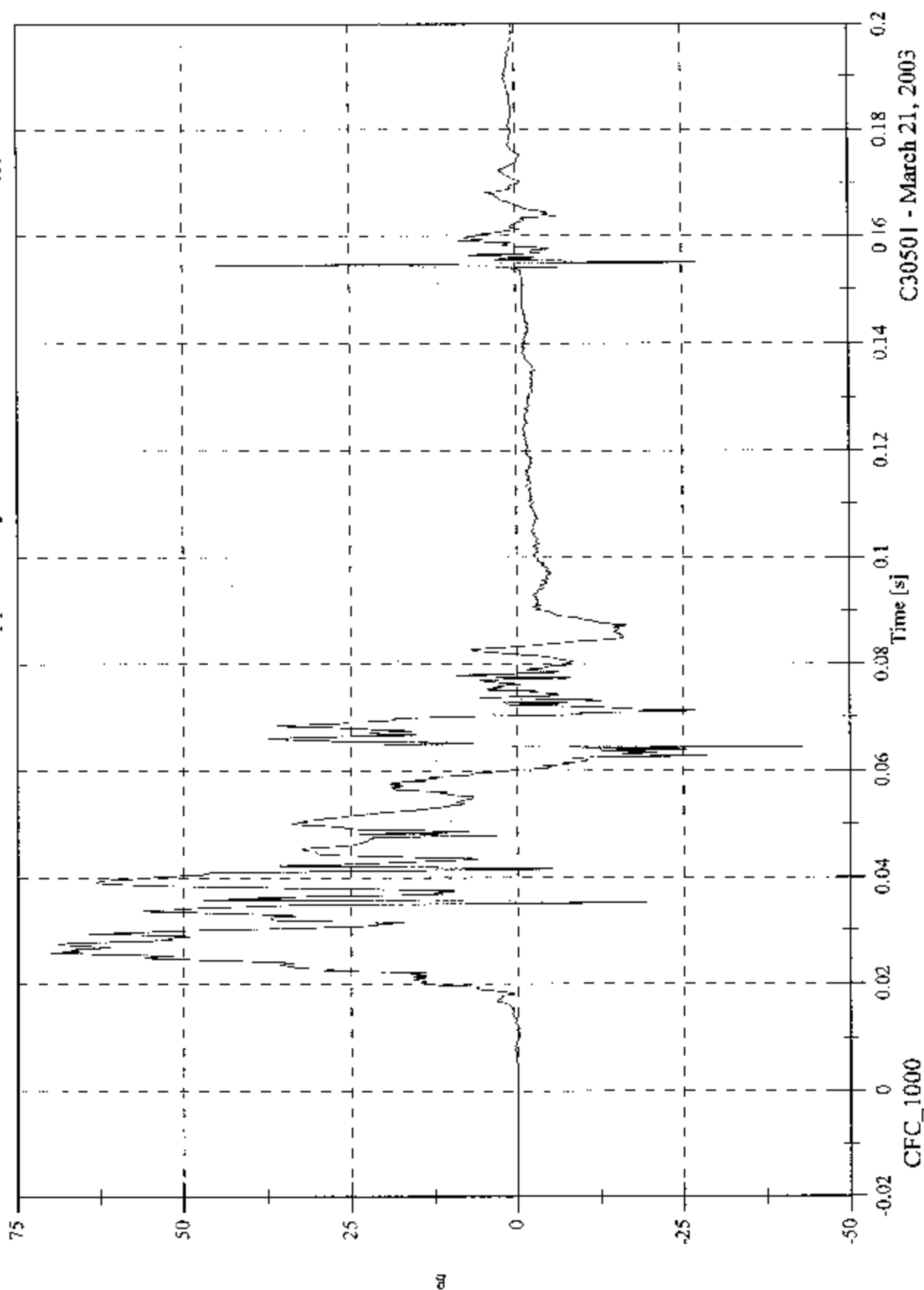


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P1 Upper Rib Ry

Max: 70.1 [g] at 0.026 [s]
Min: -43.4 [g] at 0.064 [s]

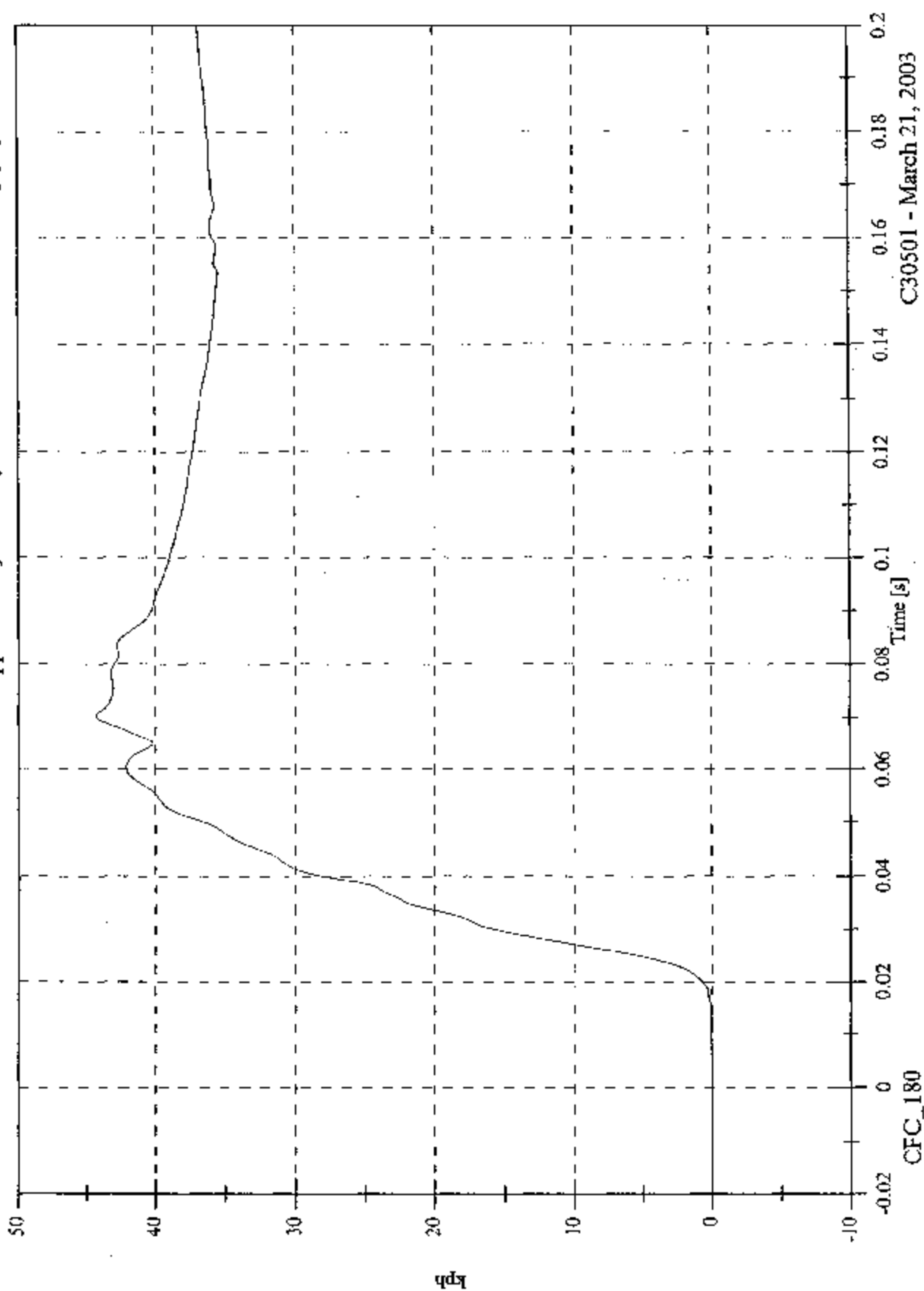


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P1 Upper Rib Ry Velocity

Max: 44.3 [kph] at 0.070 [s]
Min: -0.0 [kph] at -0.020 [s]

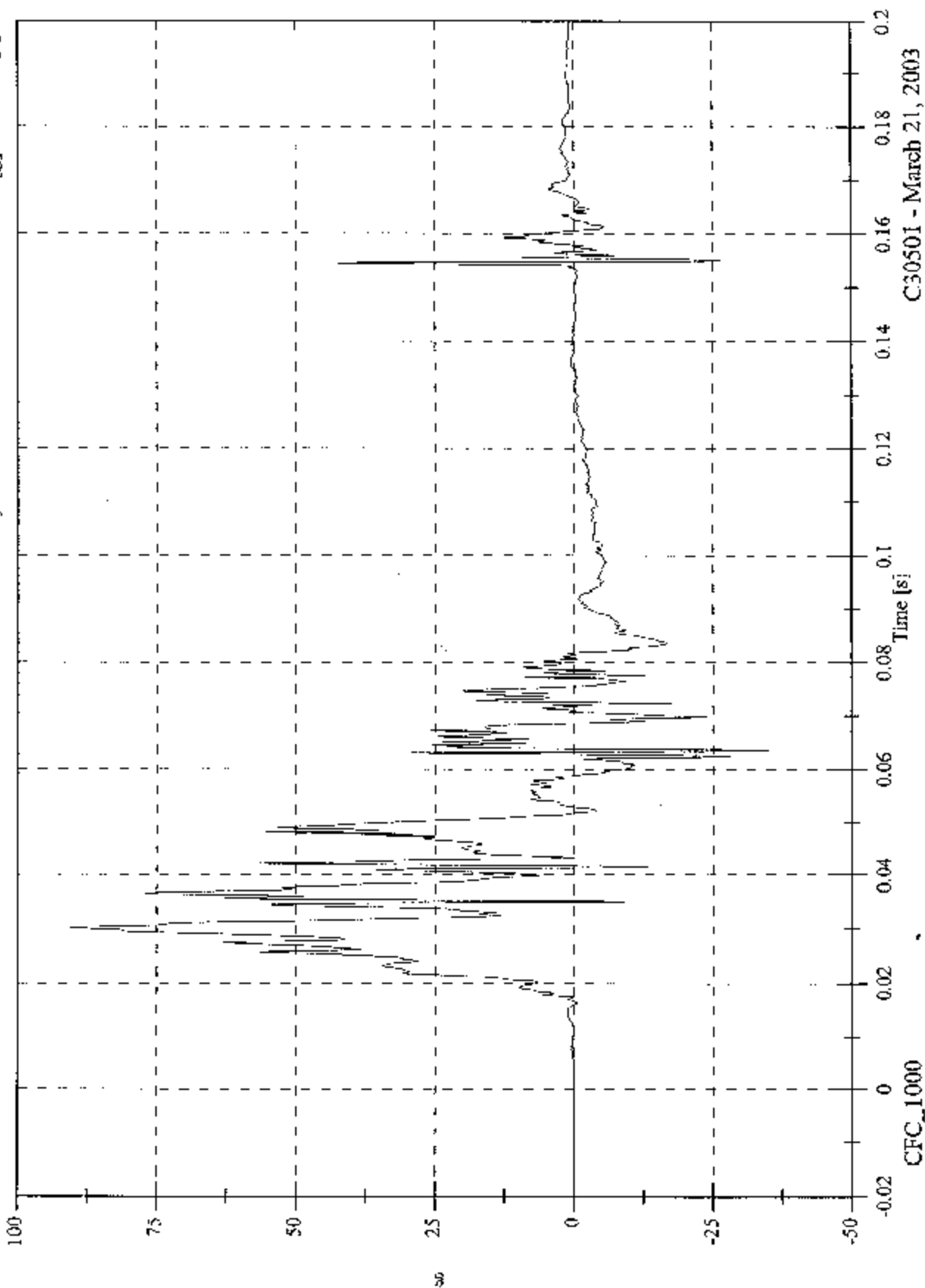


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 90.5 [g] at 0.030 [s]
Min: -35.1 [g] at 0.064 [s]

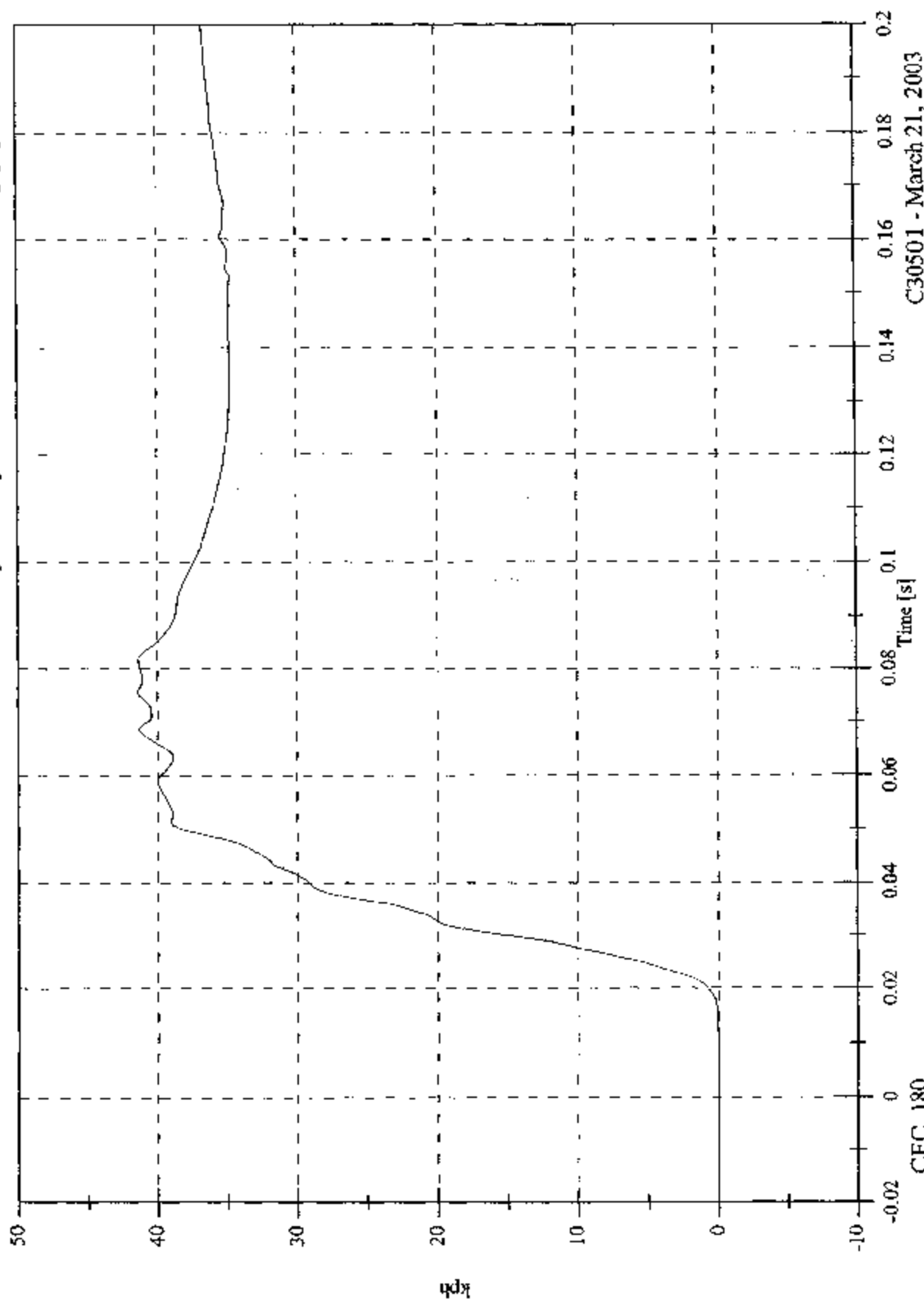
V2P1 Lower Rib Ry



2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 41.4 [kph] at 0.076 [s]
Min: -0.0 [kph] at -0.005 [s]

V2P1 Lower Rib Ry Velocity



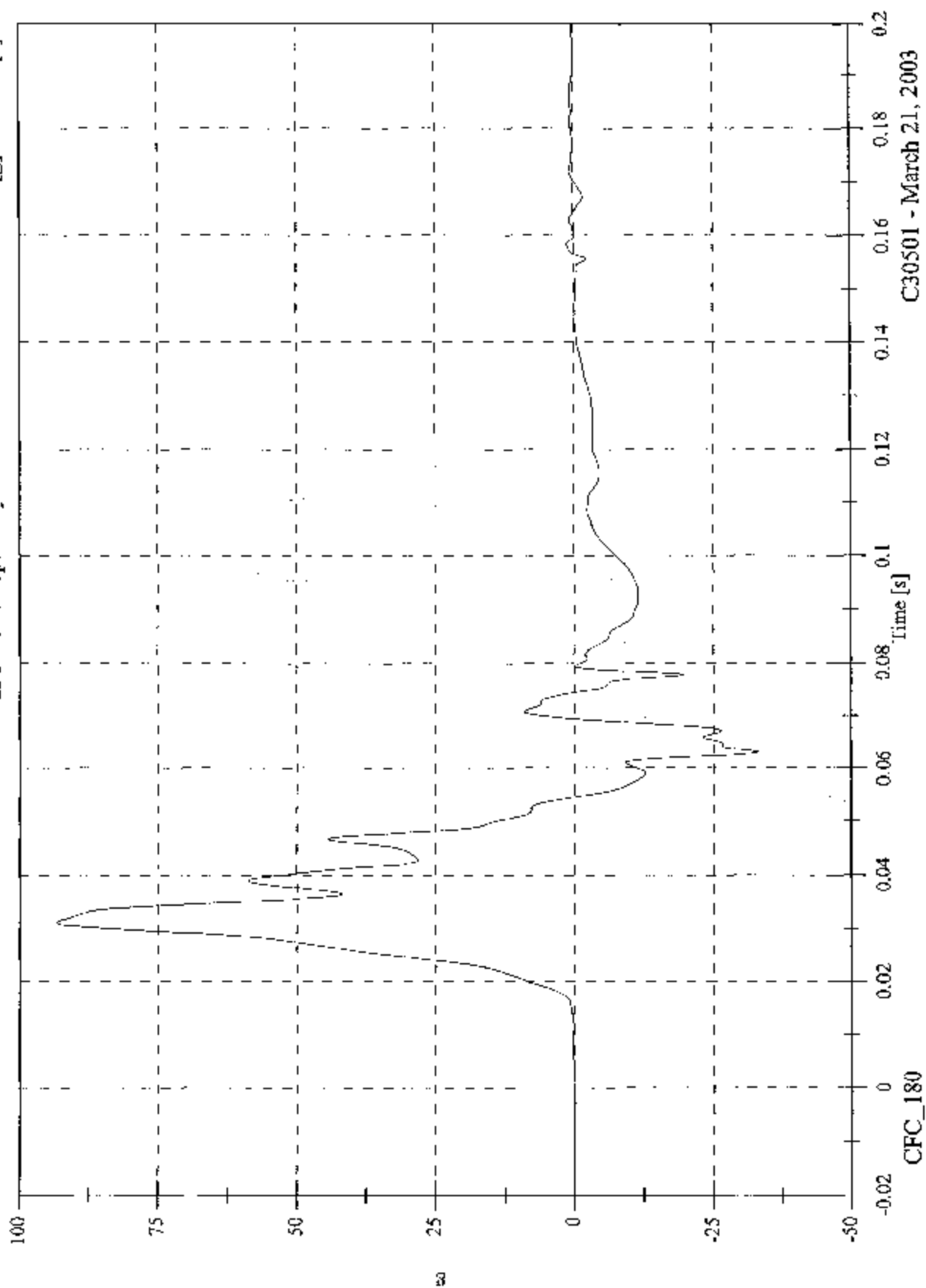
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 93.3 [g] at 0.031 [s]
Min: -33.1 [g] at 0.063 [s]

V2P1 Lower Spine Ry

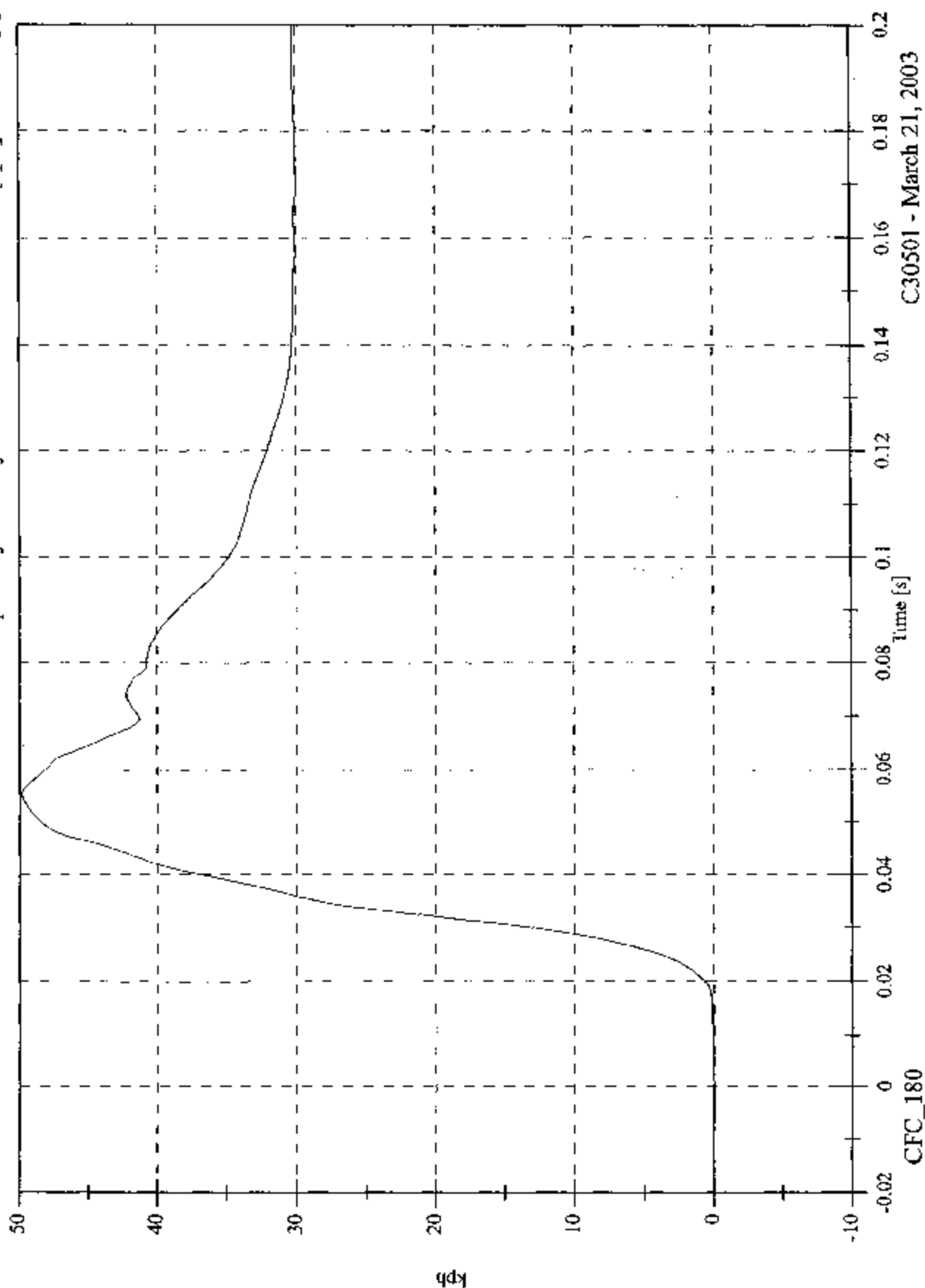


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 49.8 [kph] at 0.055 [s]
 Min: -0.0 [kph] at -0.019 [s]

V2P1 Lower Spine Ry Velocity



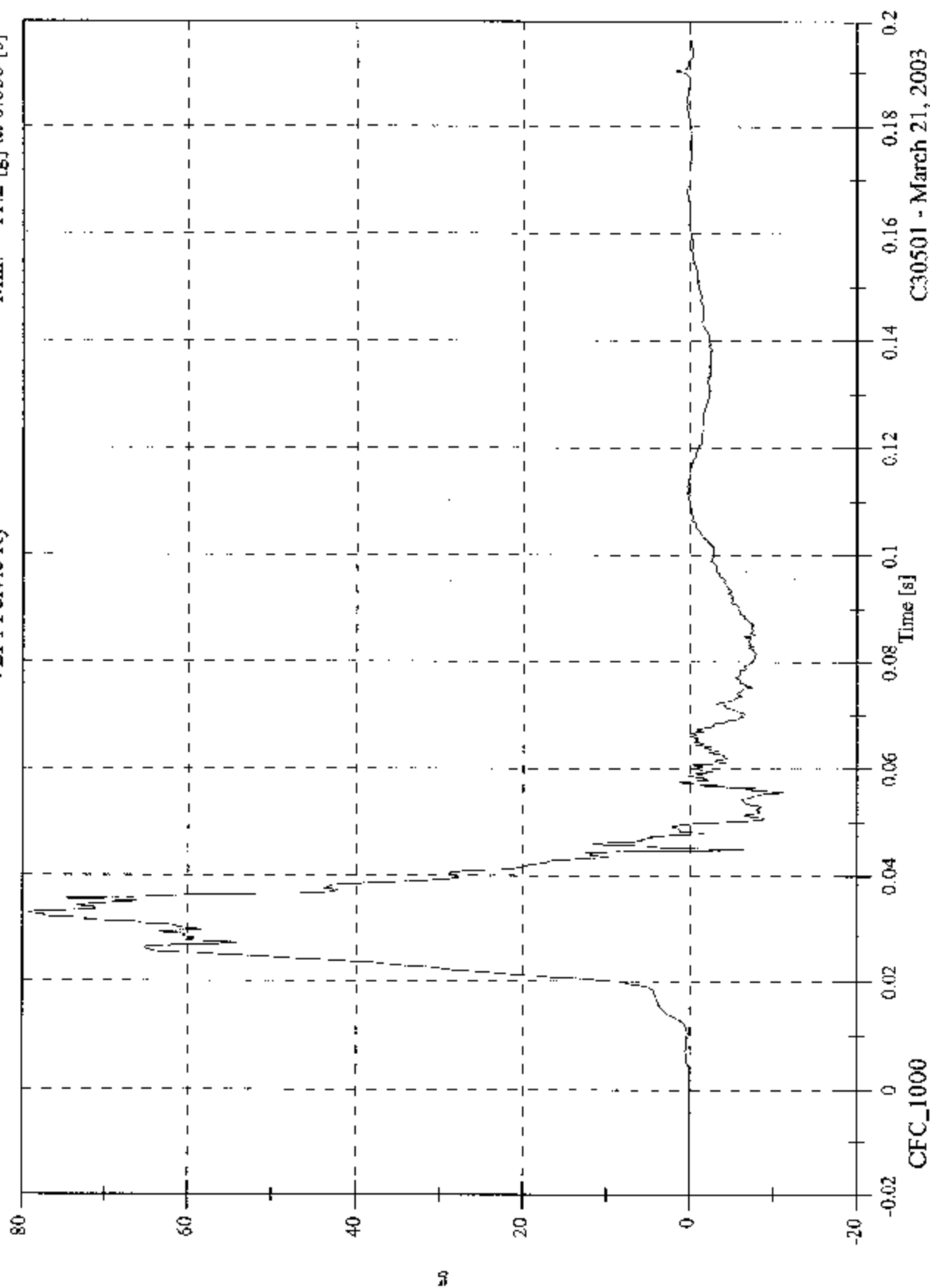
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 79.4 [g] at 0.033 [s]
Min: -11.2 [g] at 0.055 [s]

V2P1 Pelvic Ry



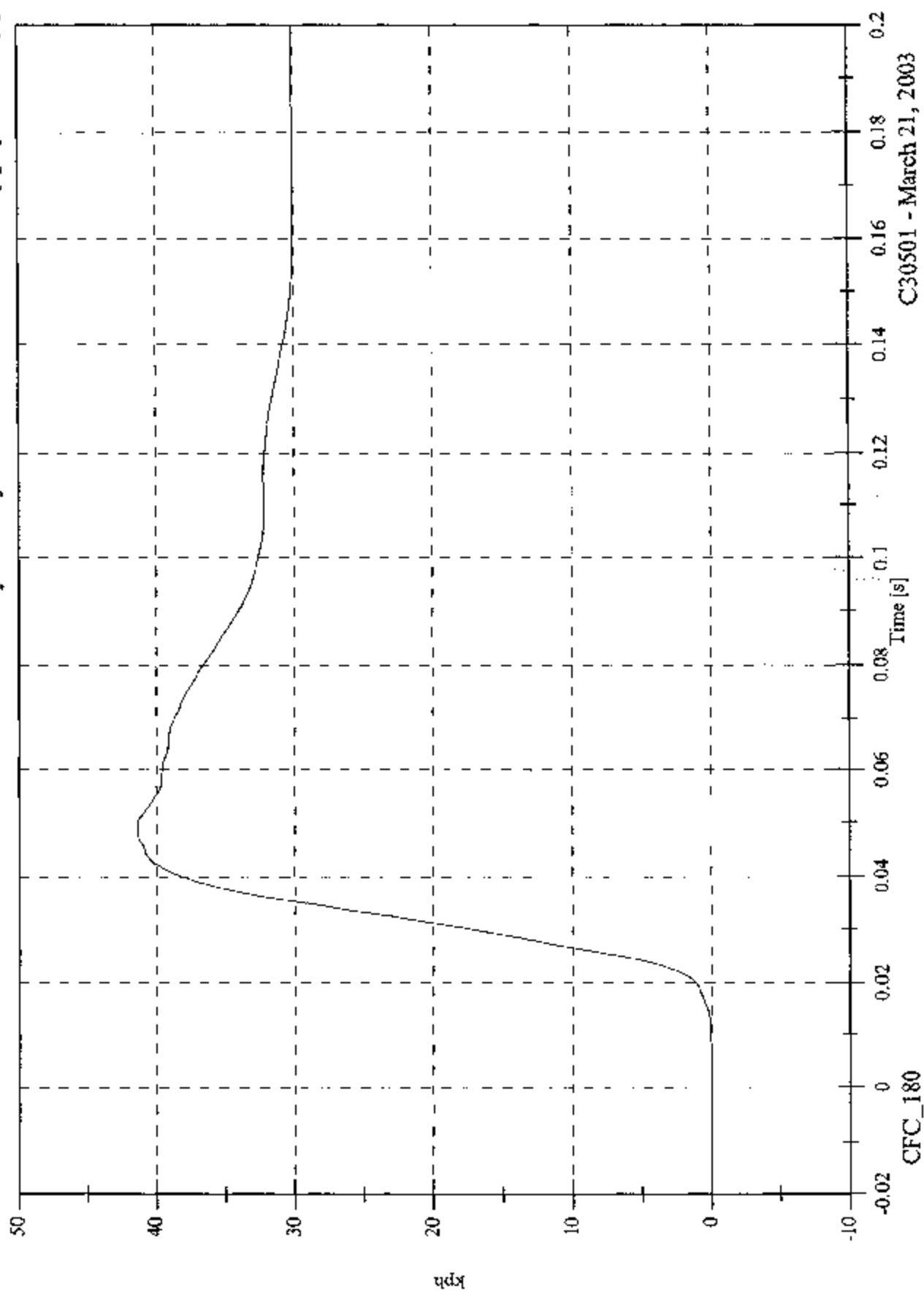
C30501 - March 21, 2003

2003 FMYSS 214D Test 4 2003 Hyundai Accent

Max: 41.4 [kph] at 0.049 [s]

Min: -0.0 [kph] at -0.020 [s]

V2P1 Pelvic Ry Velocity



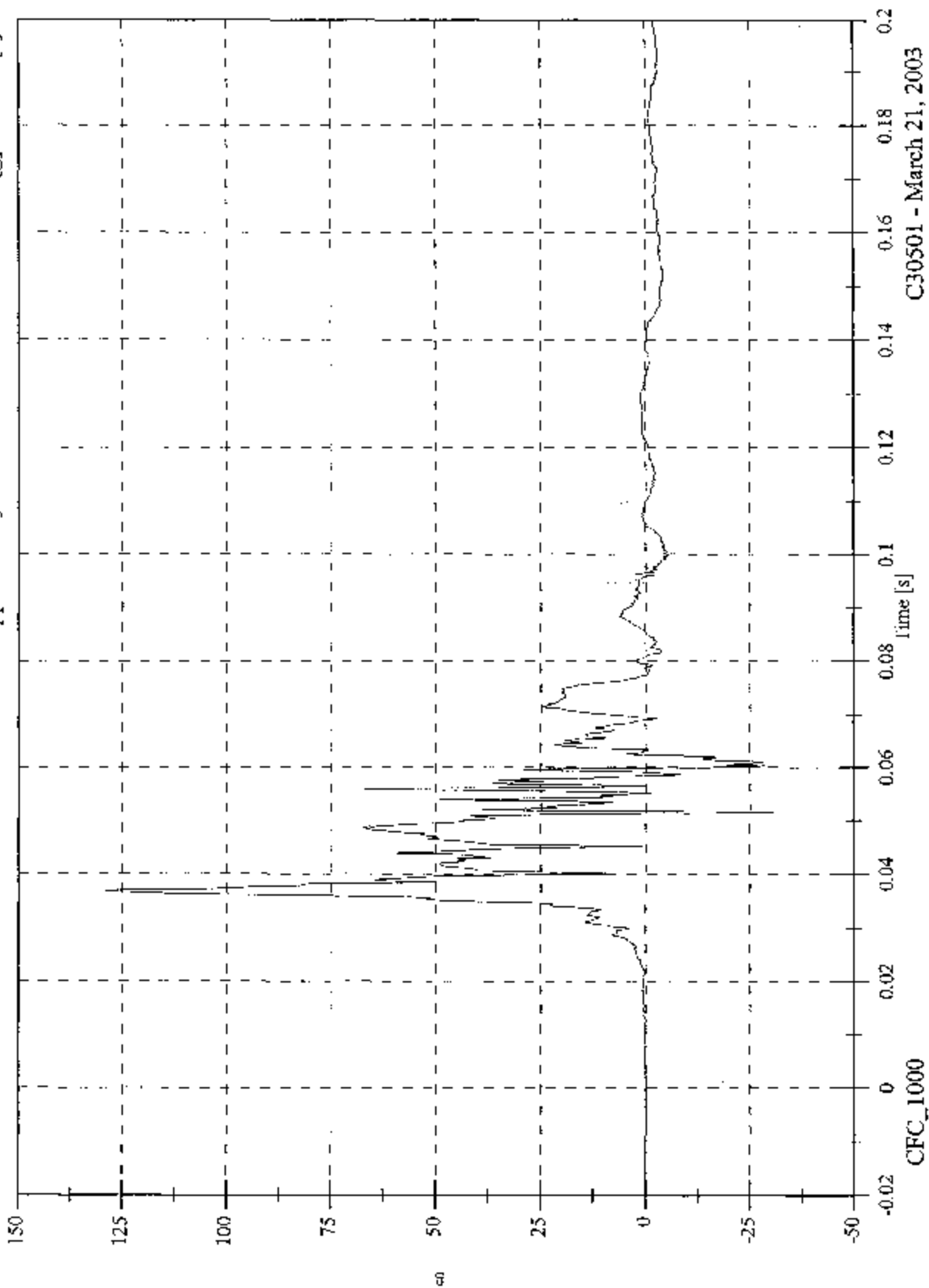
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 129.0 [g] at 0.037 [s]
Min: -31.2 [g] at 0.052 [s]

V2P4 Upper Rib Ry



CFC_1000

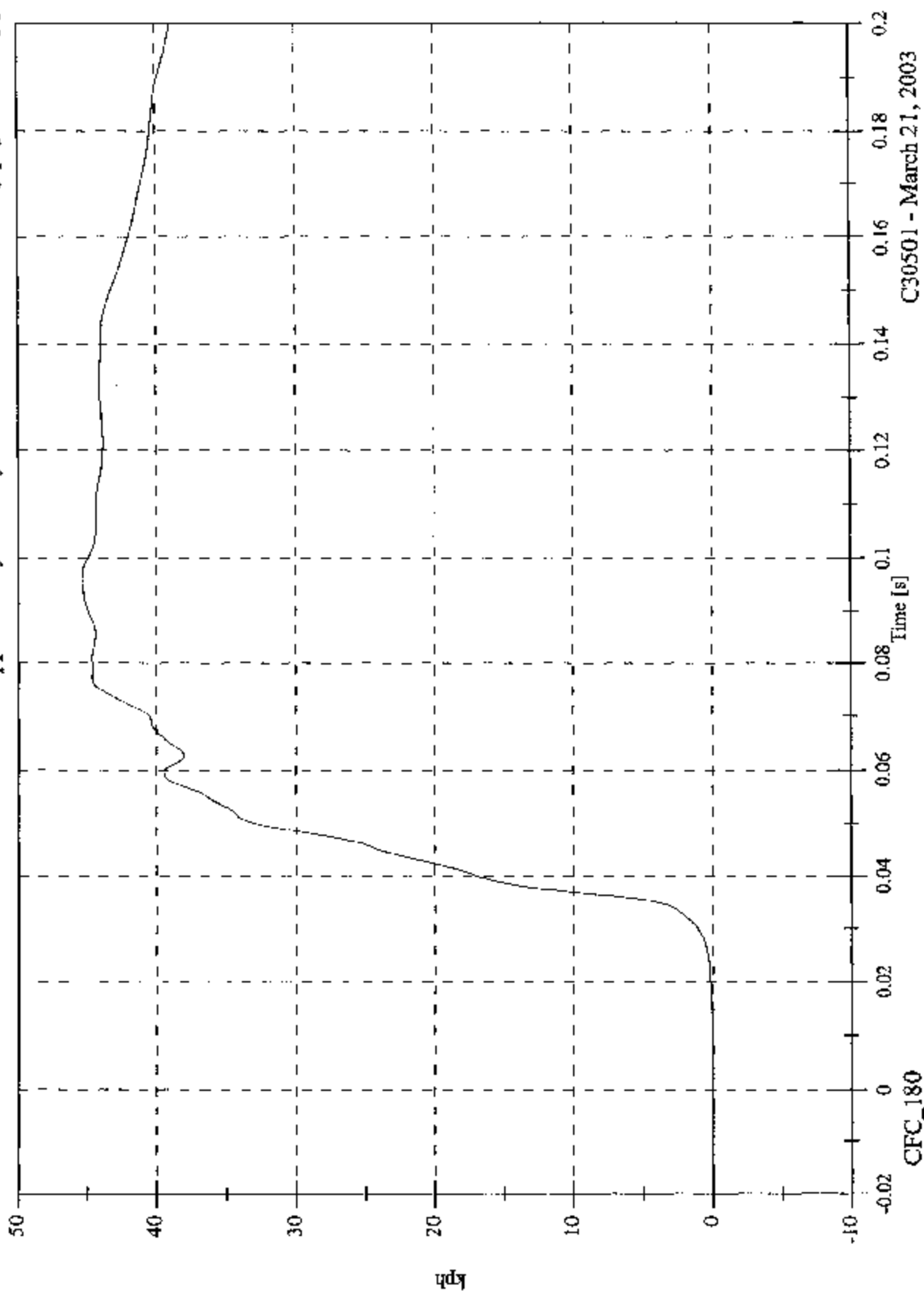
C30501 - March 21, 2003

2003 FMYSS 214D Test 4 2003 Hyundai Accent

V2P4 Upper Rib Ry Velocity

Max: 45.4 [kph] at 0.096 [s]

Min: -0.0 [kph] at -0.020 [s]



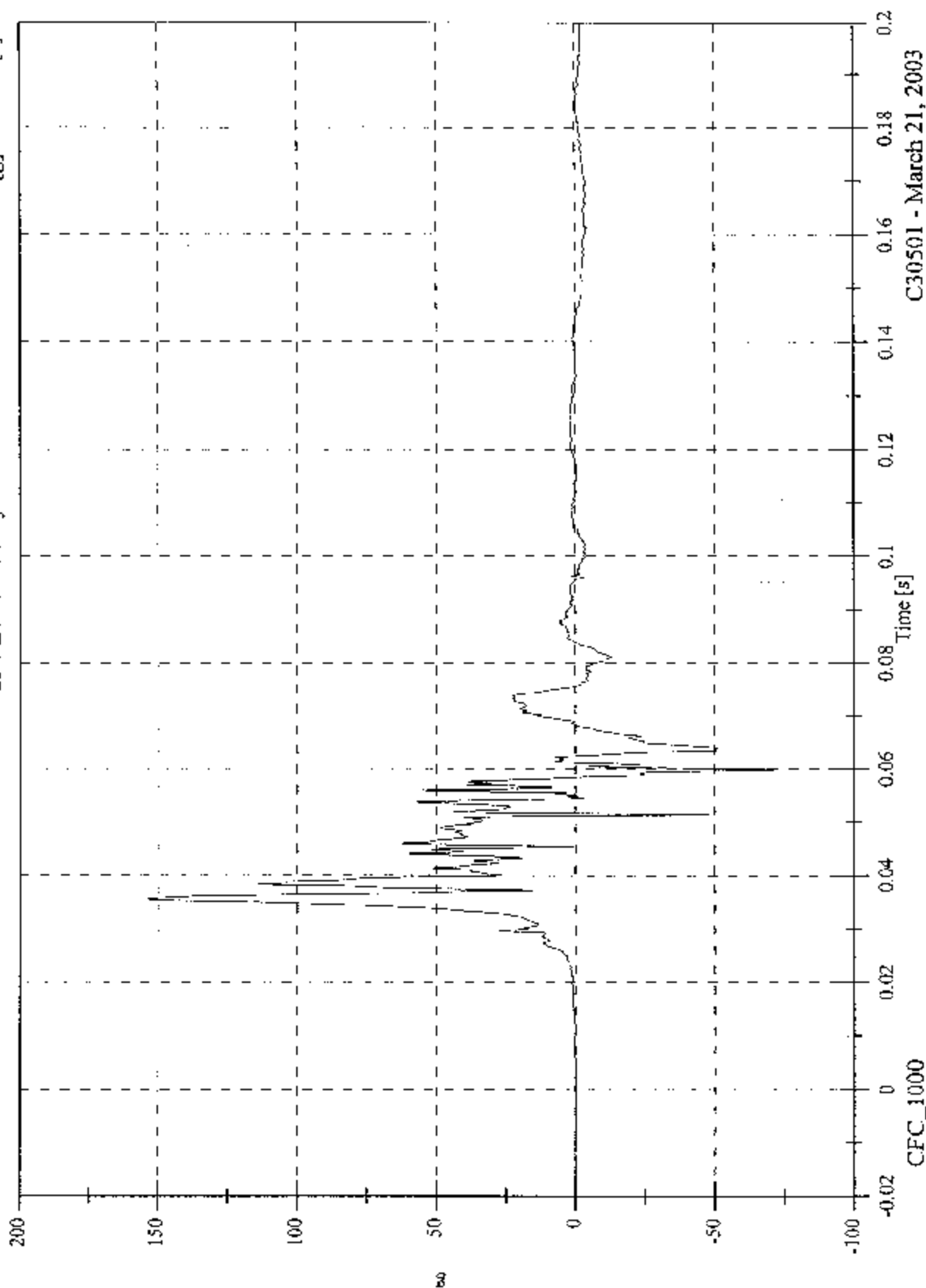
CFC_180

C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Lower Rib Ry

Max: 153.3 [g] at 0.035 [s]
Min: -71.8 [g] at 0.060 [s]

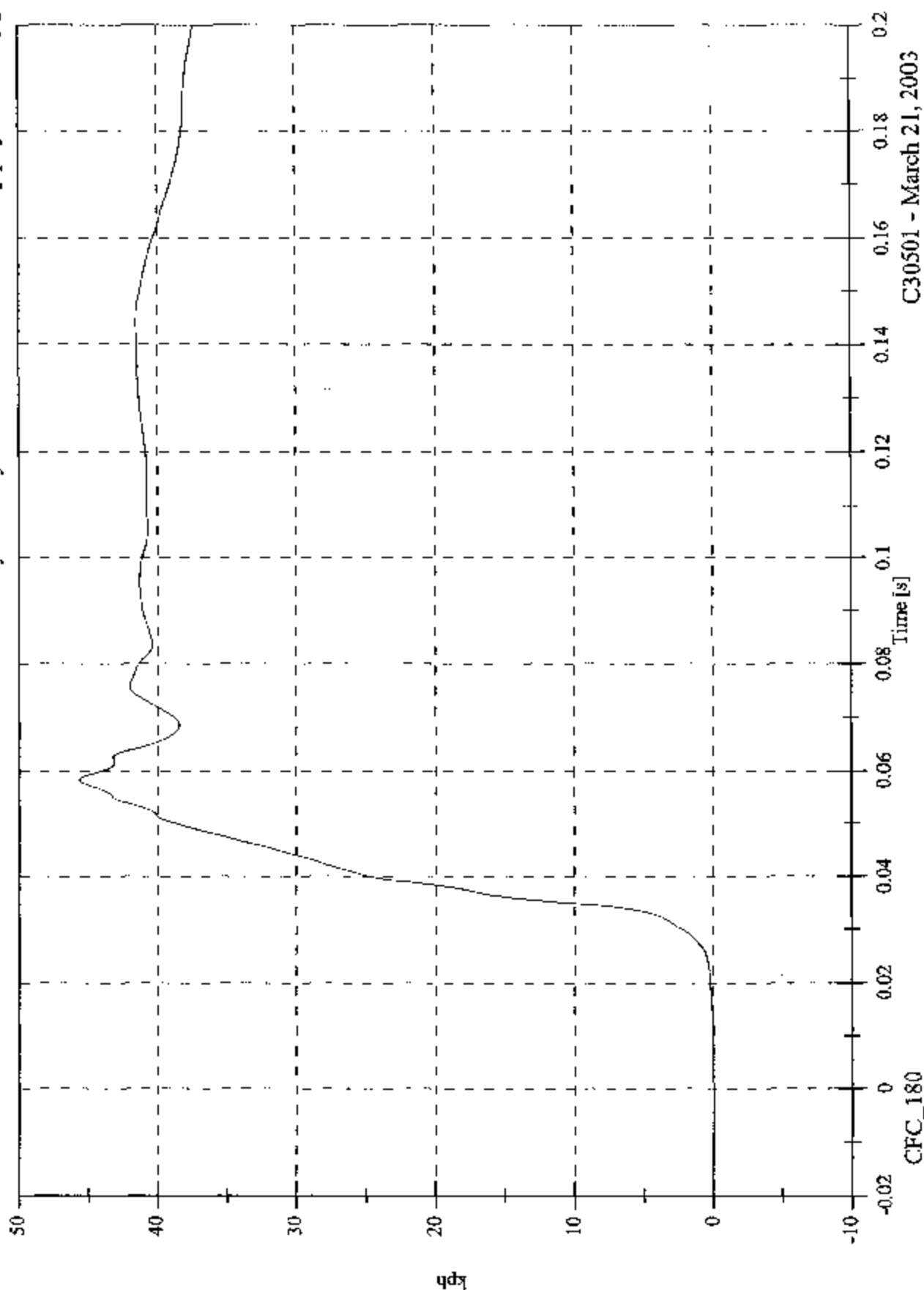


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Lower Rib Ry Velocity

Max: 45.6 [kph] at 0.058 [s]
Min: -0.0 [kph] at -0.019 [s]



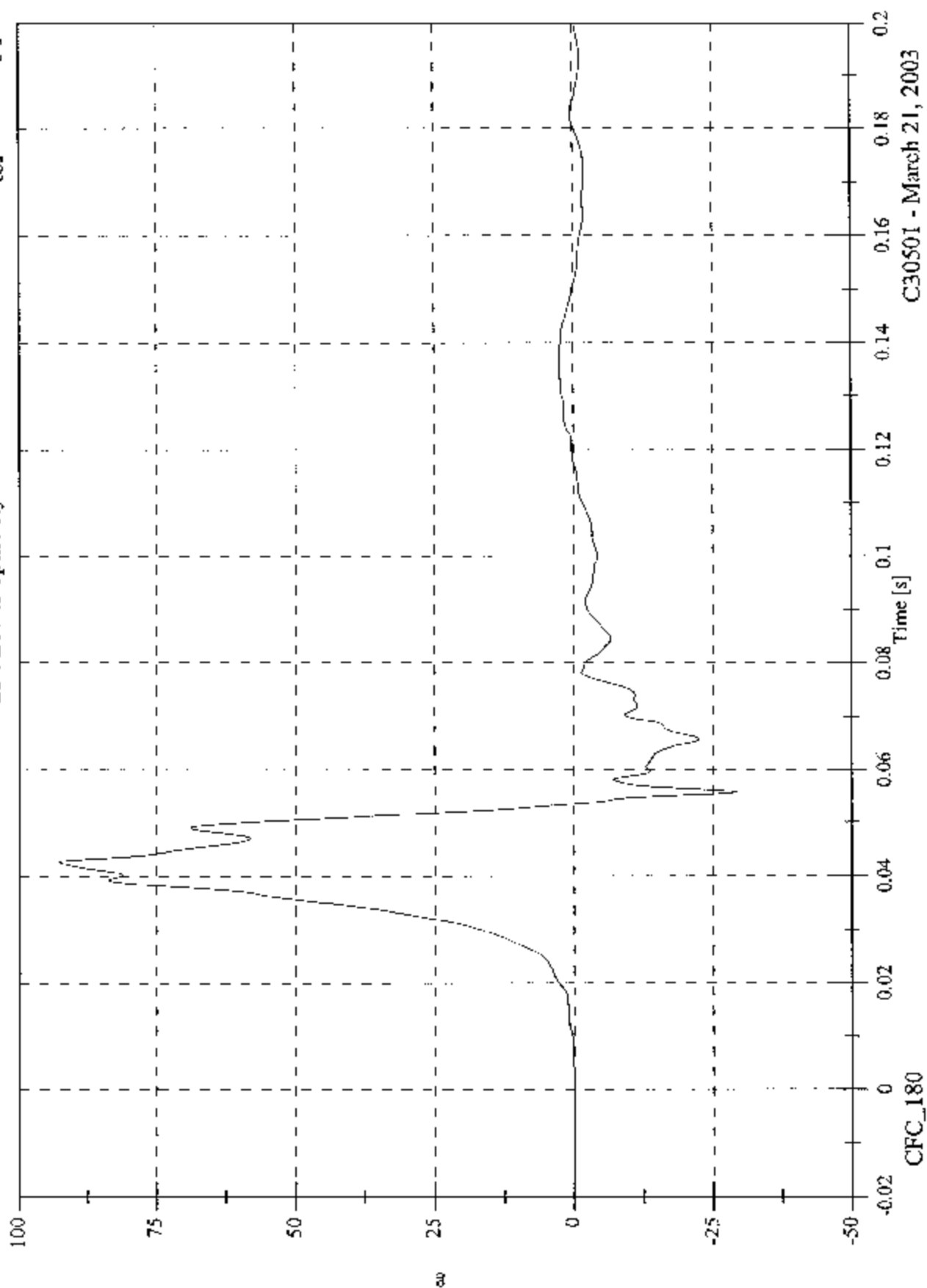
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 92.9 [g] at 0.043 [s]

Min: -29.3 [g] at 0.056 [s]

V2P4 Lower Spine Ry



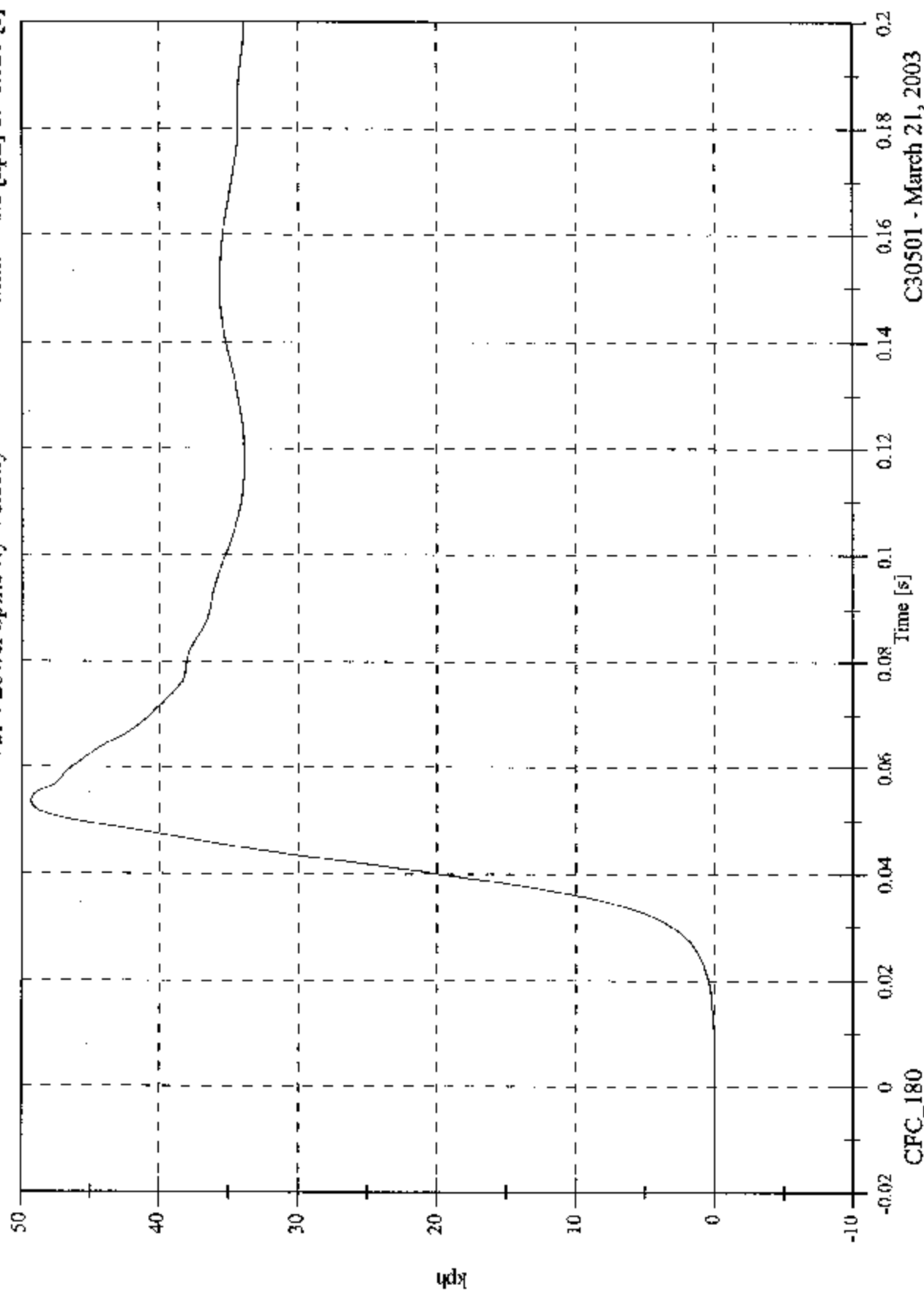
C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 49.4 [kph] at 0.053 [s]

Min: -0.0 [kph] at -0.020 [s]

V2P4 Lower Spine Ry Velocity

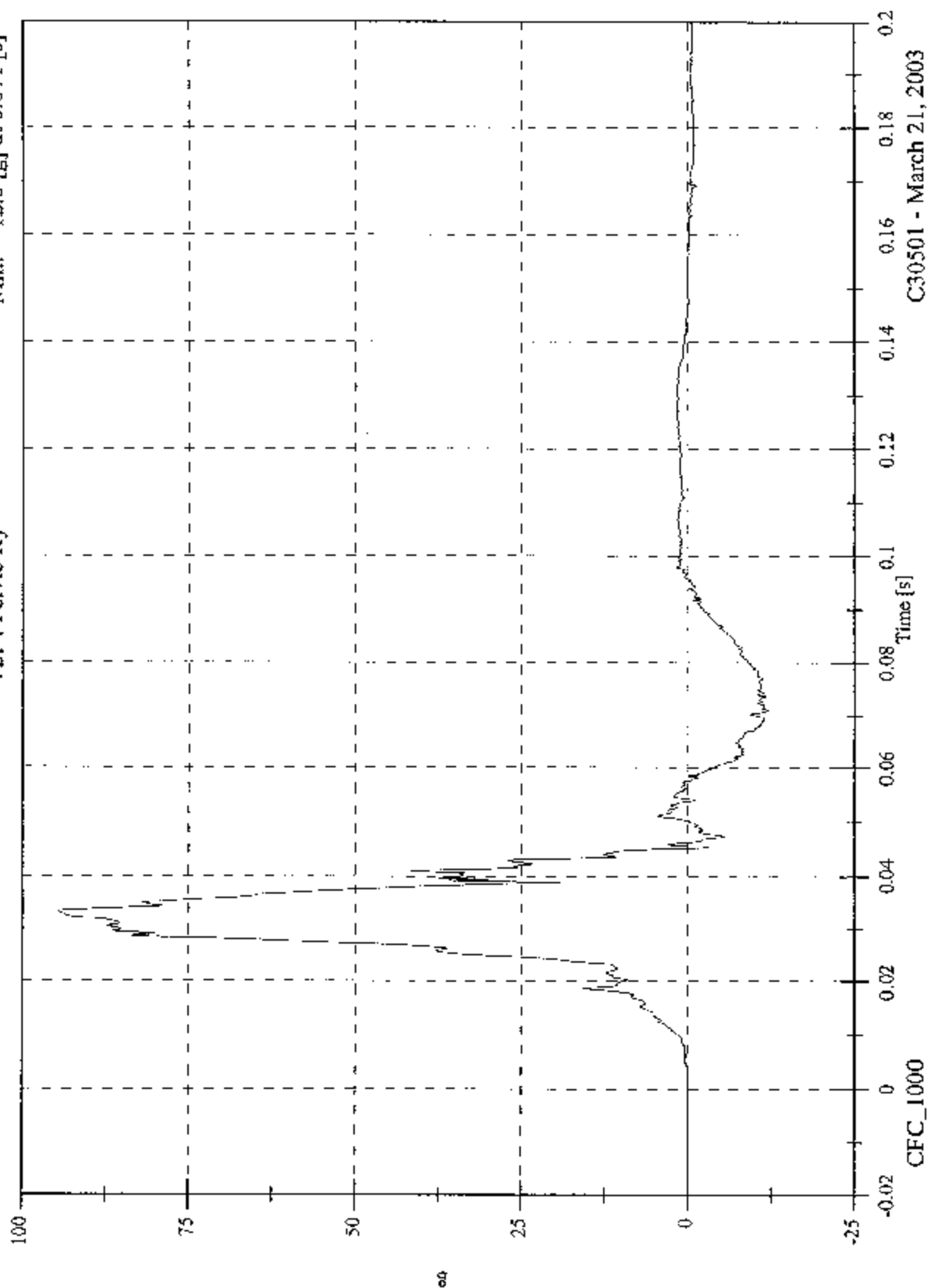


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 94.6 [g] at 0.033 [s]
Min: -12.0 [g] at 0.071 [s]

V2P4 Pelvic Ry

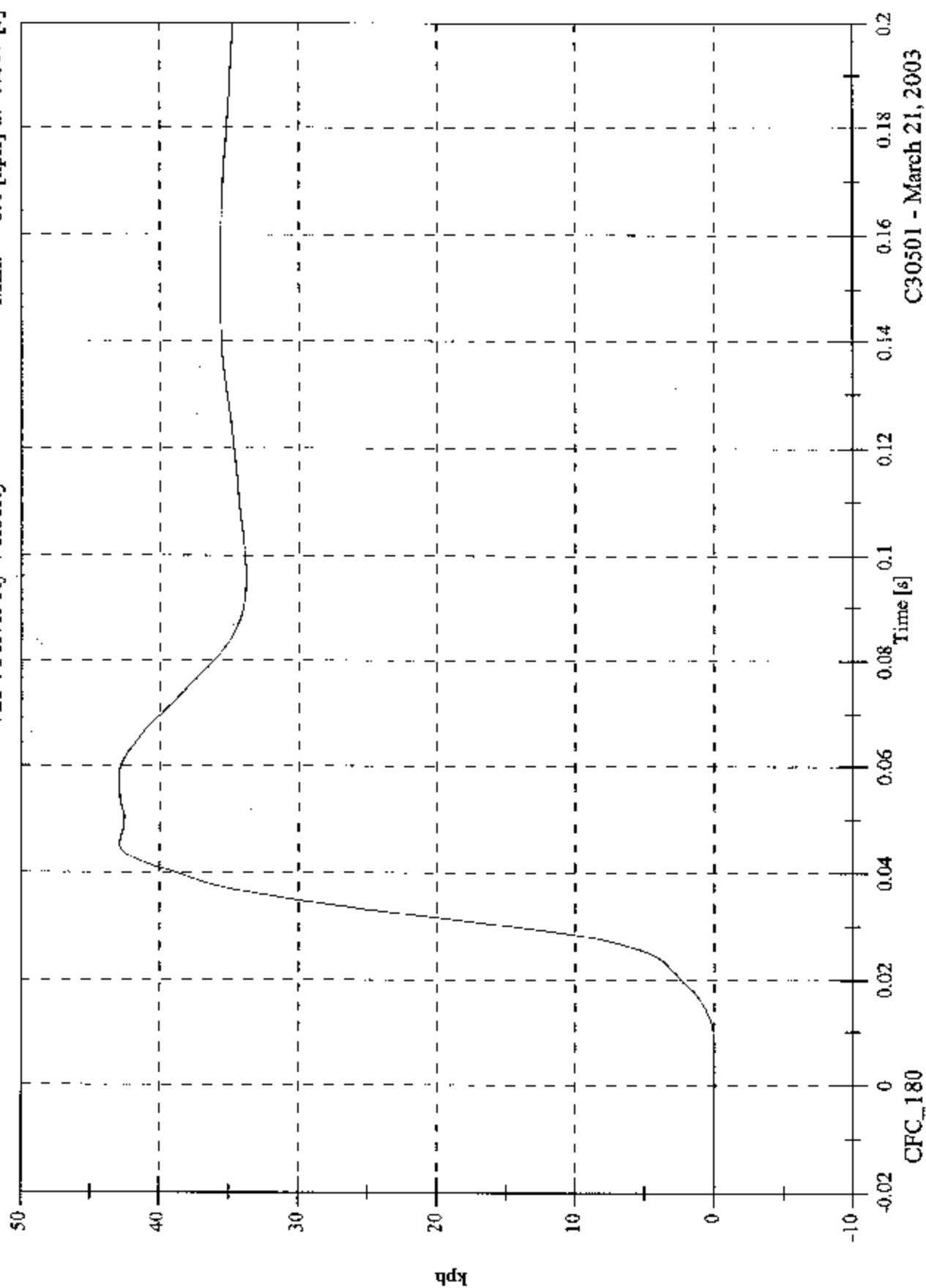


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Pelvic Ry Velocity

Max: 43.0 [kph] at 0.057 [s]
Min: -0.0 [kph] at -0.019 [s]

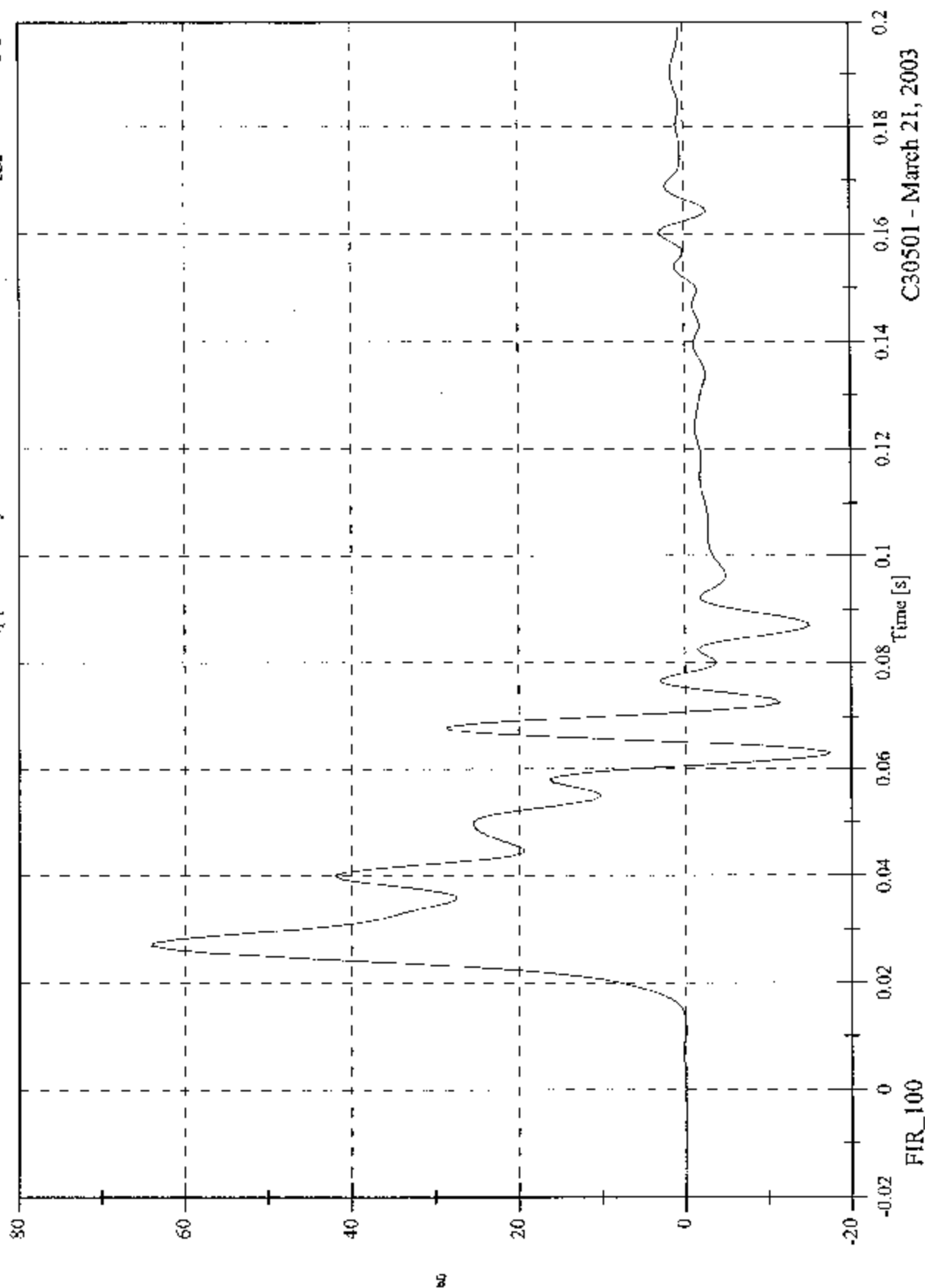


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P1 Upper Rib Ry

Max: 64.0 [g] at 0.027 [s]
Min: -17.5 [g] at 0.063 [s]

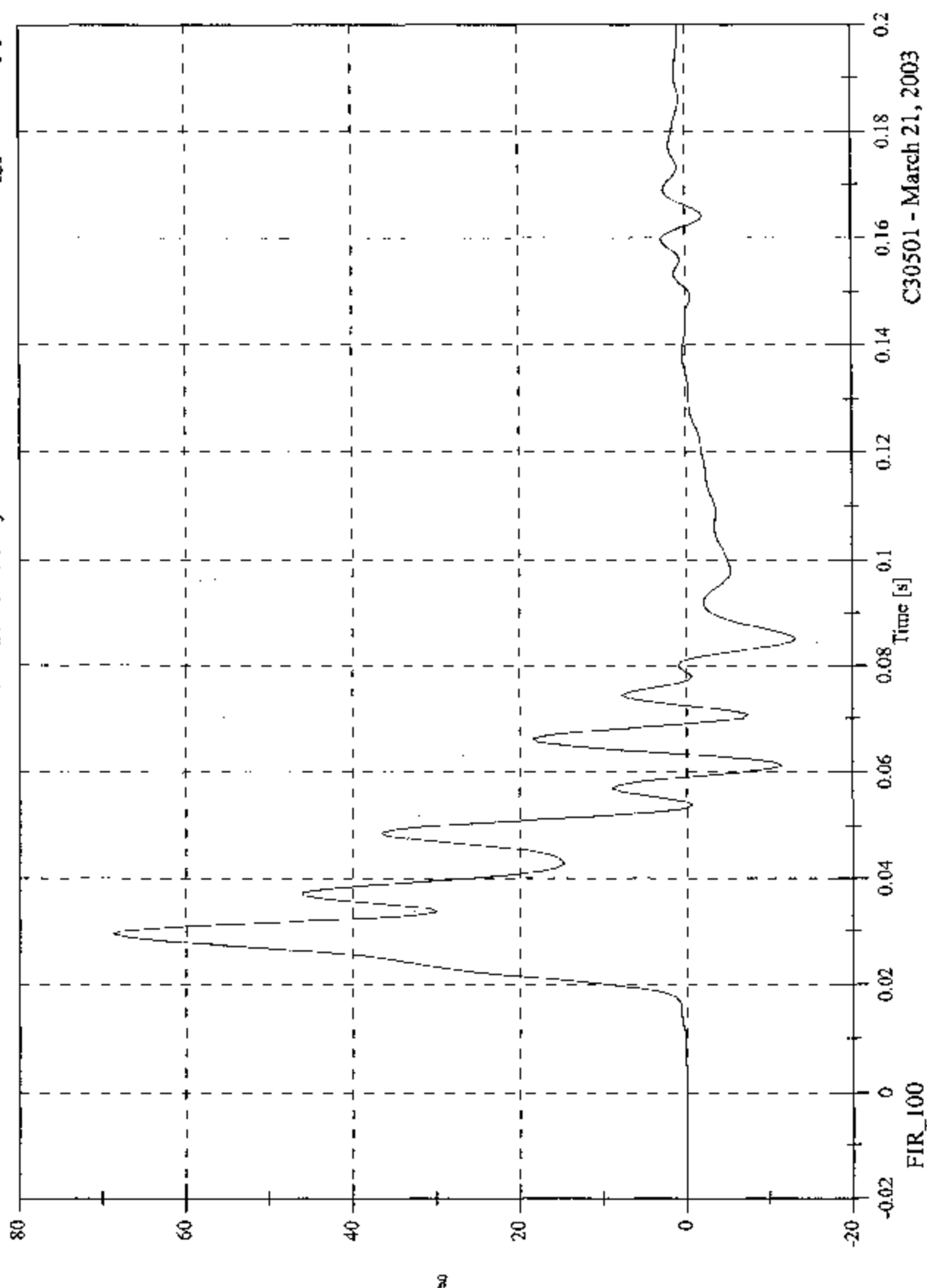


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2PI Lower Rib Ry

Max: 68.9 [g] at 0.029 [s]
Min: -13.2 [g] at 0.085 [s]

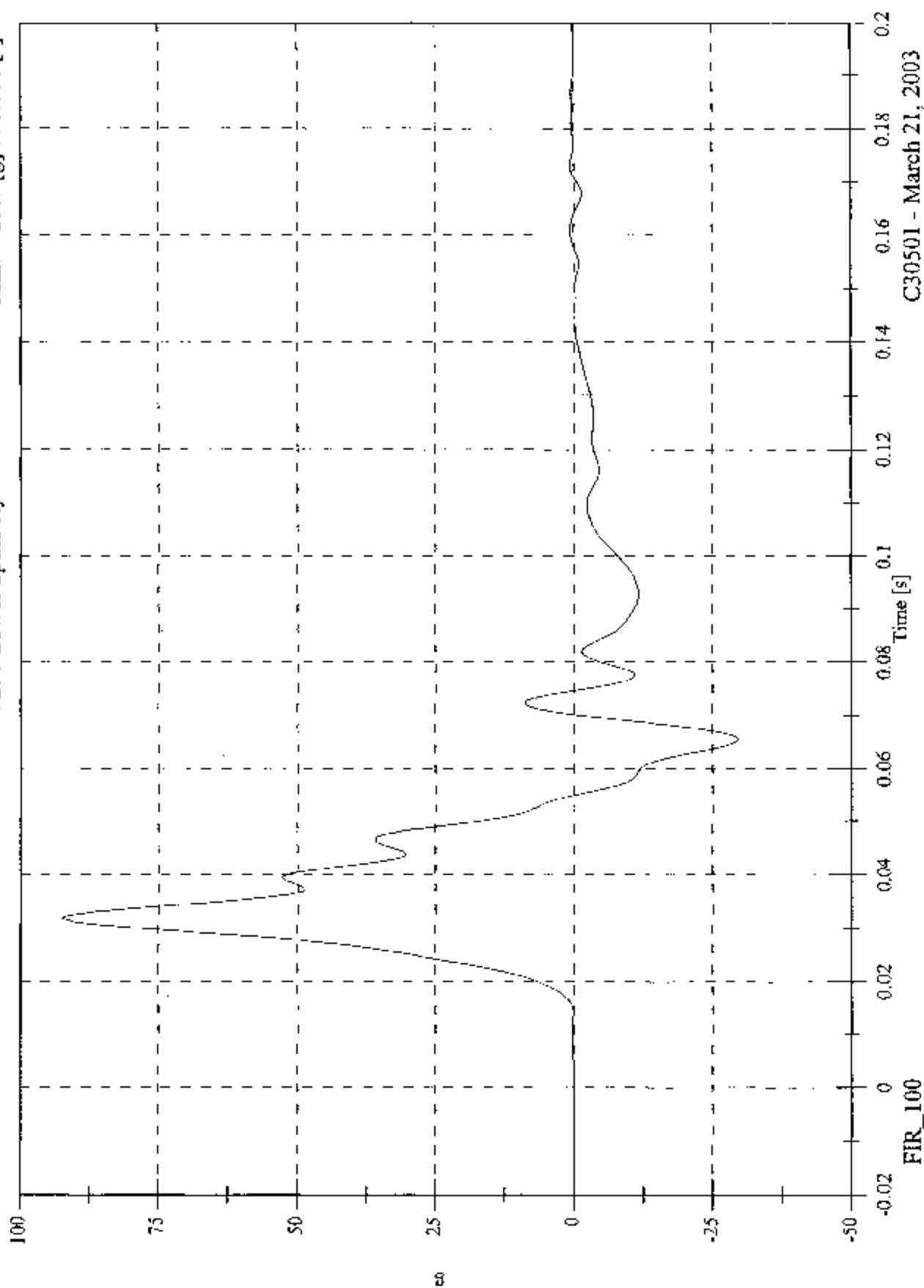


2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2PI Lower Spine Ry

Max: 92.5 [g] at 0.032 [s]

Min: -29.7 [g] at 0.066 [s]

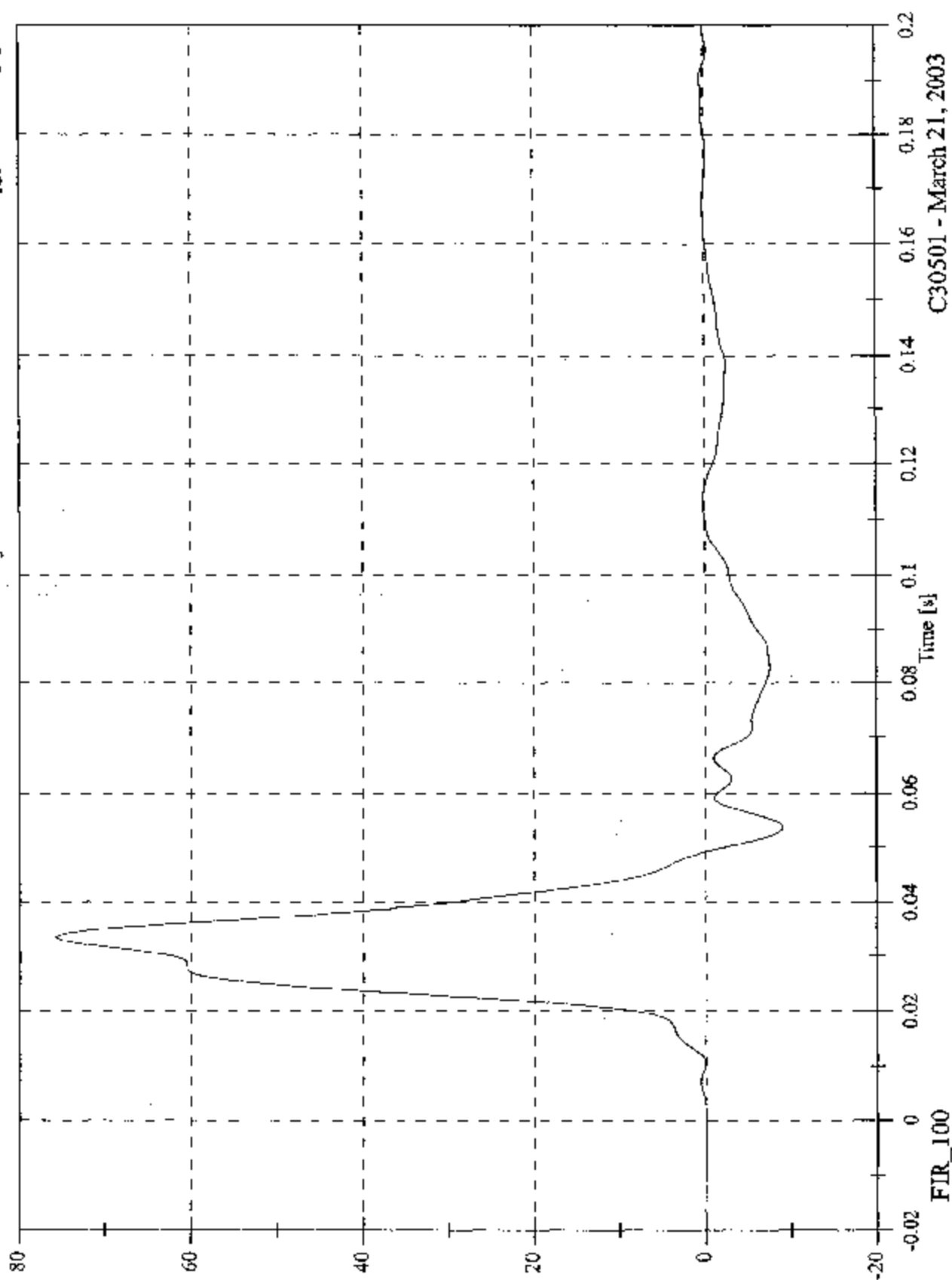


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 75.8 [g] at 0.034 [s]
Min: -9.0 [g] at 0.054 [s]

V2P1 Pelvic Ry

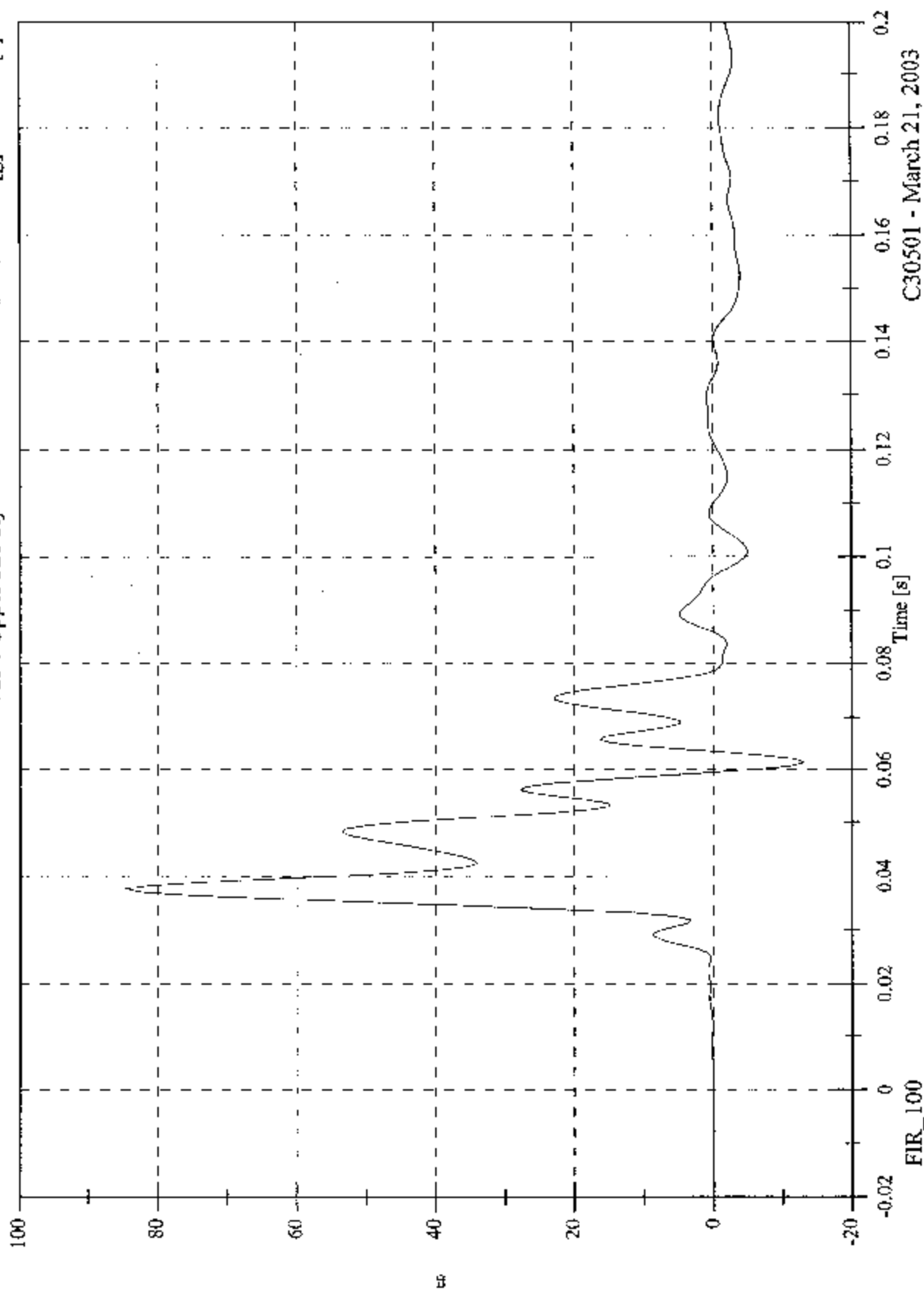


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 84.6 [g] at 0.037 [s]
Min: -13.0 [g] at 0.061 [s]

V2P4 Upper Rib Ry

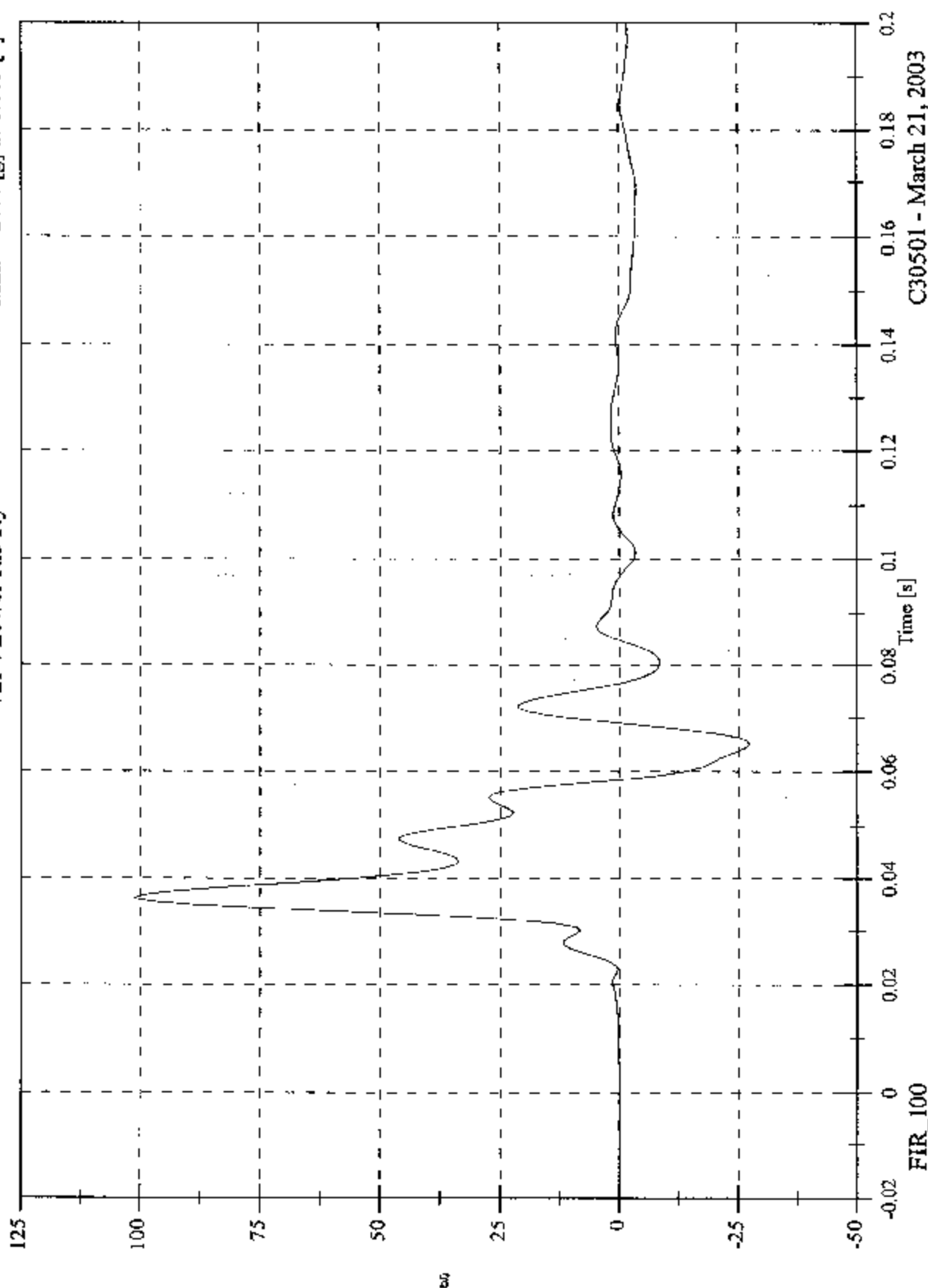


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Lower Rib Ry

Max: 101.2 [g] at 0.036 [s]
Min: -27.4 [g] at 0.065 [s]

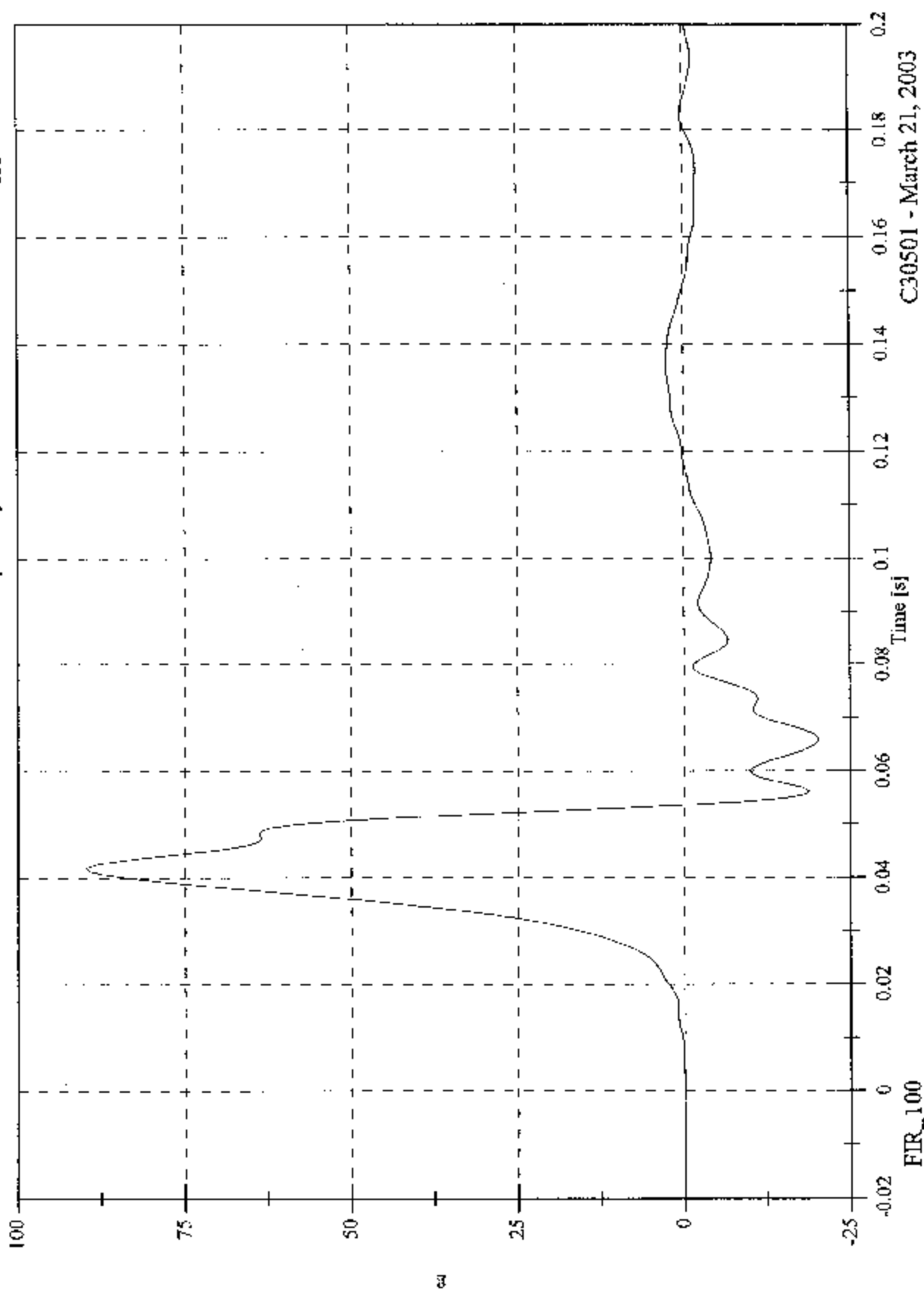


2003 FMVSS 214D Test 4 2003 Hyundai Accent

V2P4 Lower Spine Ry

Max: 89.7 [g] at 0.042 [s]

Min: -20.2 [g] at 0.066 [s]

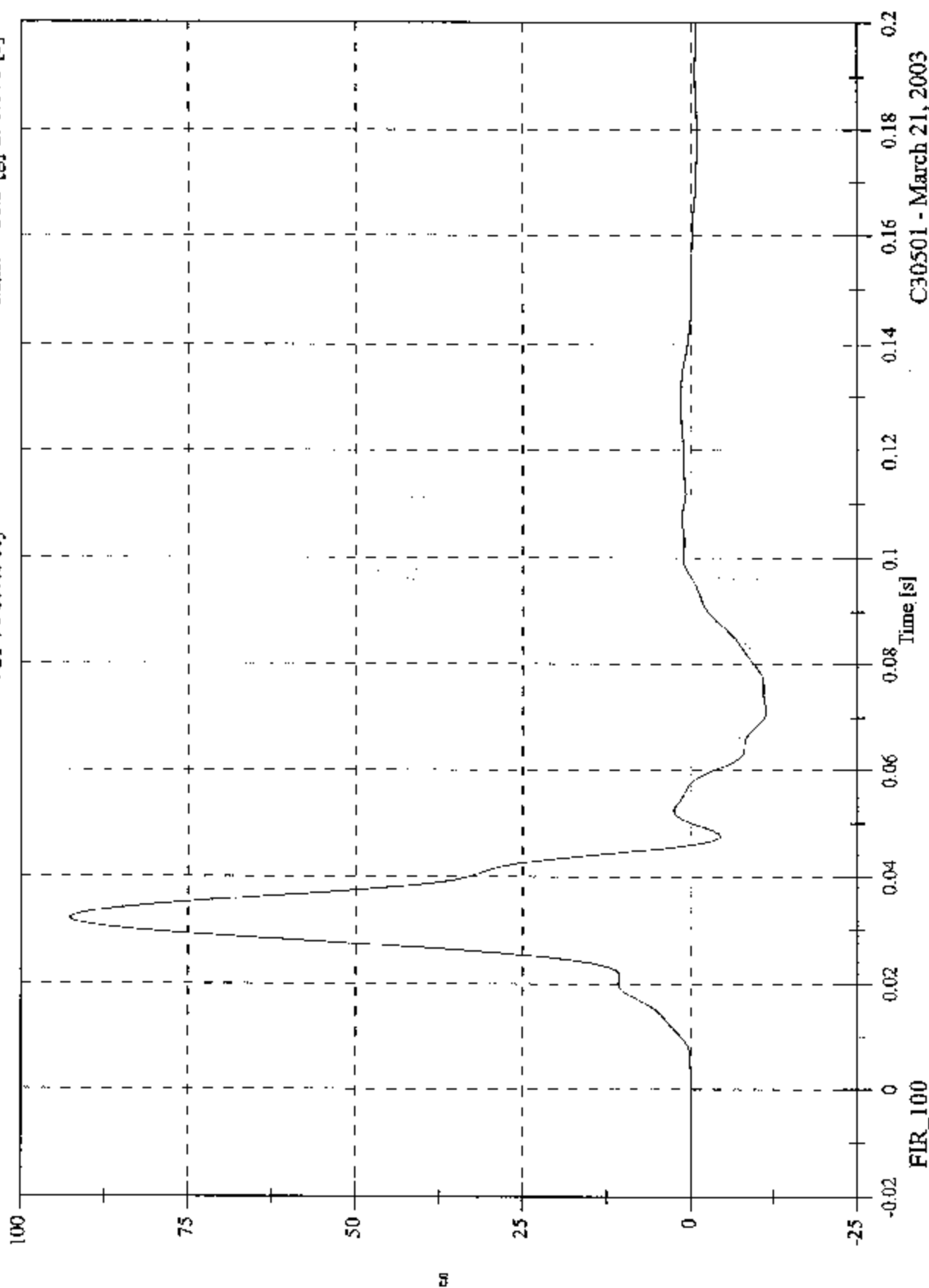


C30501 - March 21, 2003

2003 FMVSS 214D Test 4 2003 Hyundai Accent

Max: 92.7 [g] at 0.032 [s]
Min: -11.3 [g] at 0.071 [s]

V2P4 Pelvic Ry



C30501 - March 21, 2003

APPENDIX C

SID HYBRID III CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION
CONFIGURED FOR LEFT SIDE IMPACT

Date: February 28, 2003; March 27, 2003

Sequential Test Number:

2, 3

Laboratory Technician:

B. Swieciecki

TEST PARAMETER	SPECIFICATION	SID H3 015 NO.:		SID H3 016 NO.:	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902	902	902
RH- Rib Height (mm)	501 - 521	510	511	513	513
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	236	236	236	236
KV- Knee Pivot from Back Line (mm)	511 - 526	521	521	521	521
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	495	495
HW- Hip Width (mm)	356 - 391	376	376	368	368
THORAX IMPACTS					
TEMPERATURE (°C)	18.9 - 25.5	21.1	21.1	21.1	21.7
RELATIVE HUMIDITY (%)	10 - 70	33	35	33	36
PROBE SPEED (m/s)	4.27 - 4.33	4.3	4.27	4.3	4.29
UPPER RIB (g's)	37 - 46	40.32	37.99	43.75	41.98
LOWER RIB (g's)	37 - 46	38.23	38.07	41.17	41.69
LOWER SPINE (g's)	15 - 22	18.94	18.62	21.87	21.92
PELVIS IMPACT					
TEMPERATURE (°C)	18.9 - 25.5	21.1	21.1	21.1	21.7
RELATIVE HUMIDITY (%)	10 - 70	33	35	33	36
PROBE SPEED (m/s)	4.27 - 4.33	4.28	4.27	4.31	4.32
PELVIS (g's)	40 - 60	41.02	44.32	46.16	43.48

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

2

Date: February 28, 2003

Laboratory Technician:

B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 2
 Date: February 28, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	510
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	376

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 2
Date: February 3, 2003 Laboratory Technician: B. Swiecicki

DAMPER IDENTIFICATION: _____

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	29
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	1122.40
	DISPLACEMENT (mm)	30 - 35	30.16
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	2063.48
	DISPLACEMENT (mm)	32 - 37	35.62
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	4399.67
	DISPLACEMENT (mm)	33 - 40	38.49

DAMPER SETTING: 5

REMARKS: None

015 Shock Low at 3.05 m/s

Low Part 572F Shock Absorber Impact

Calibration Date:

02-03-03

Serial No: 015

Work File:

015SL 2-03-03

TEST RESULTS

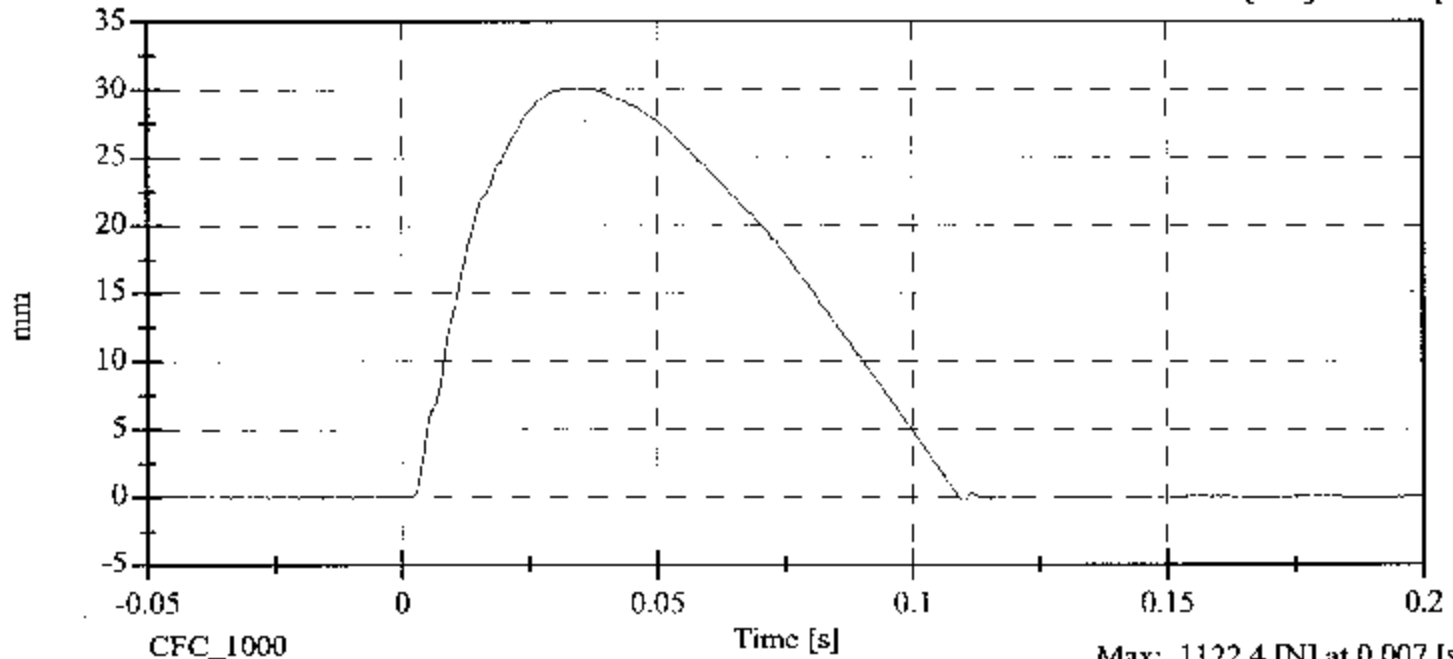
TEST CONDITION	PARAMETERS	RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Displacement:	30.00-35.00 mm	30.16 mm	Passed
Maximum Force:	836.00-1125.00 N	1122.40 N	Passed

015 Shock Low

Displacement vs. Time

Max: 30.2 [mm] at 0.035 [s]

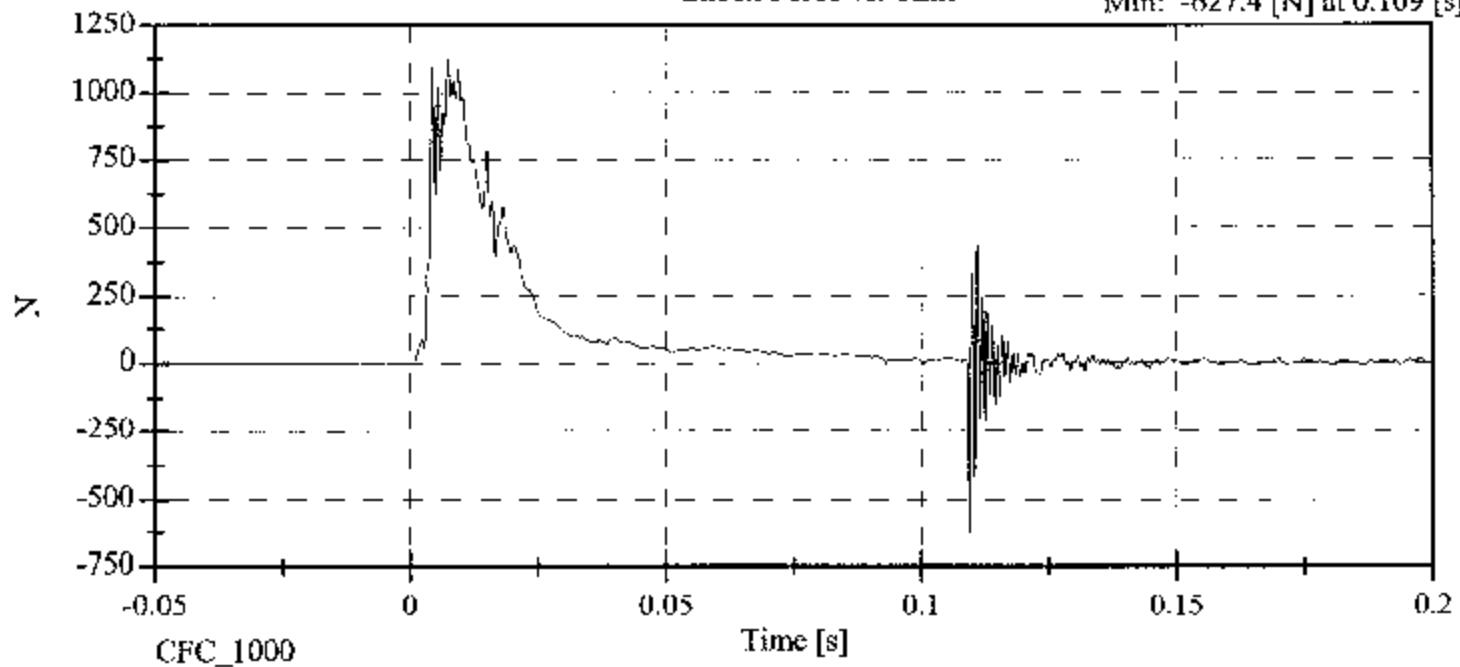
Min: -0.3 [mm] at 0.110 [s]



Shock Force vs. Time

Max: 1122.4 [N] at 0.007 [s]

Min: -627.4 [N] at 0.109 [s]



015 Shock Medium at 4.27 m/s

Medium Part 572F Shock Absorber Impact

Calibration Date:

02-03-03

Serial No: 015

Work File:

015SM1 2-03-03

TEST RESULTS

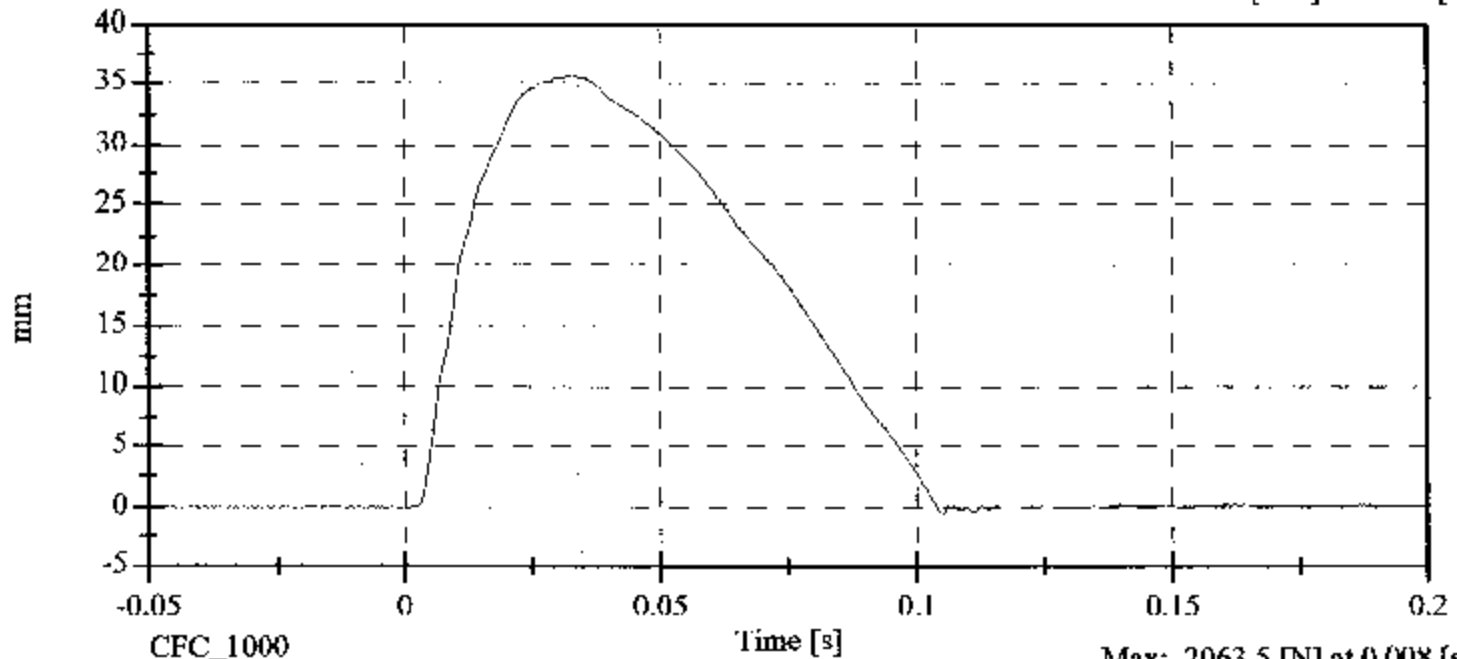
TEST CONDITION	PARAMETERS	RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Displacement:	32.00-37.00 mm	35.62 mm	Passed
Maximum Force:	1730.00-2099.00 N	2063.48 N	Passed

015 Shock Medium

Displacement vs. Time

Max: 35.6 [mm] at 0.033 [s]

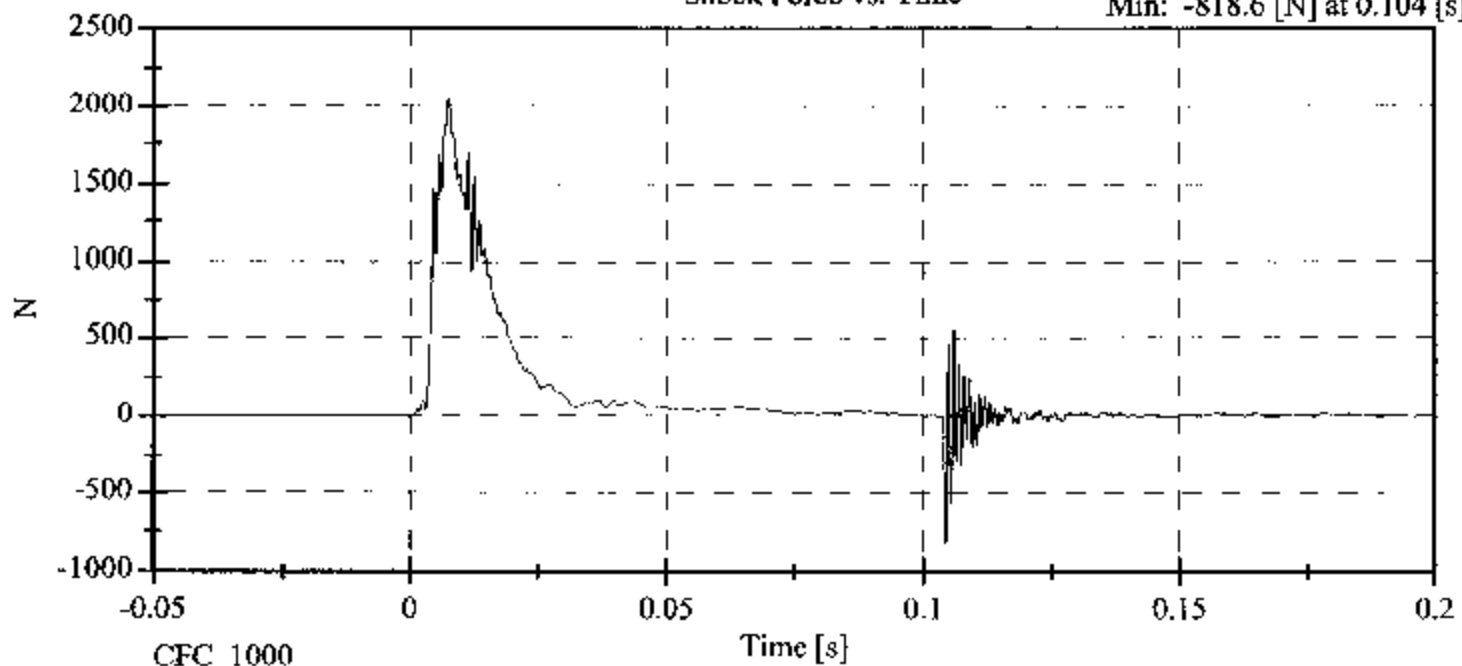
Min: -0.5 [mm] at 0.105 [s]



Shock Force vs. Time

Max: 2063.5 [N] at 0.008 [s]

Min: -818.6 [N] at 0.104 [s]



015 Shock High at 6.10 m/s

High Part 572F Shock Absorber Impact

Calibration Date:

02-03-03

Serial No: 015

Work File:

015SH 2-03-03

-----TEST RESULTS-----

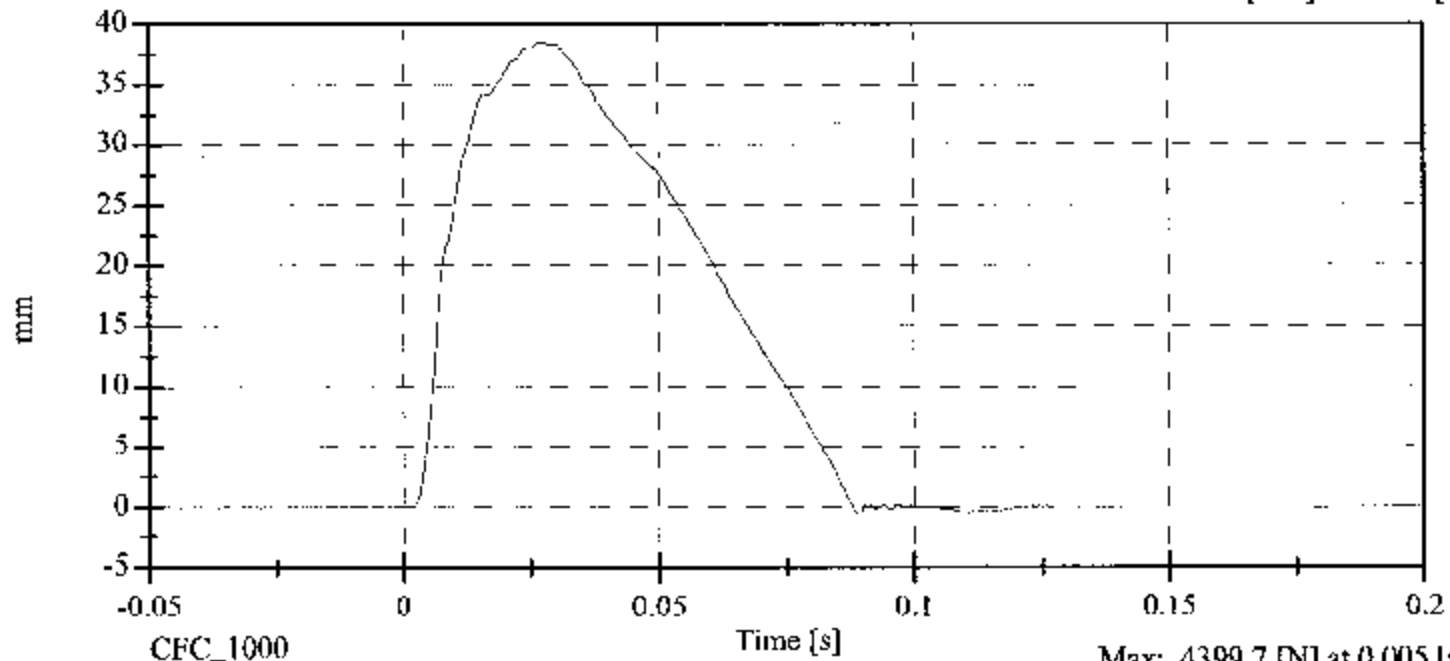
TEST CONDITION	PARAMETERS	RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Displacement:	33.00-40.00 mm	38.49 mm	Passed
Maximum Force:	3741.00-4448.00 N	4399.67 N	Passed

015 Shock High

Displacement vs. Time

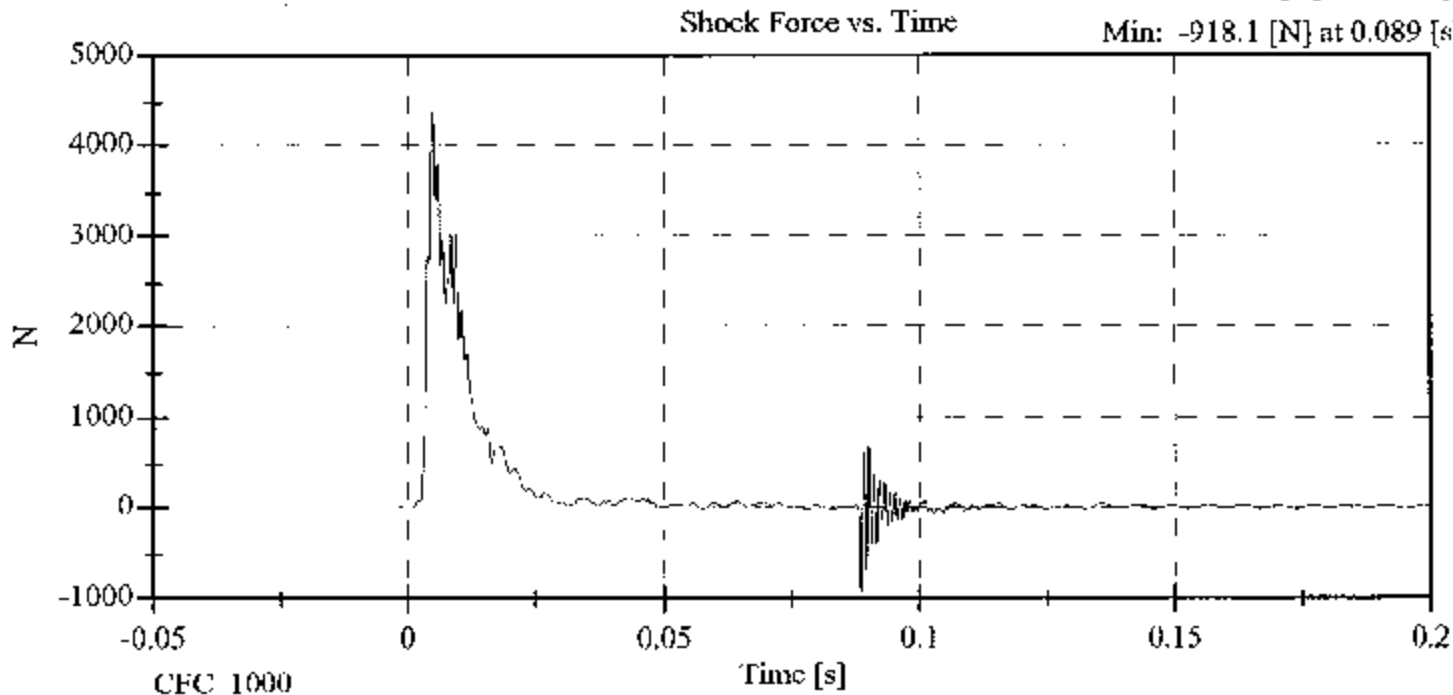
Max: 38.5 [mm] at 0.028 [s]

Min: -0.6 [mm] at 0.089 [s]



Max: 4399.7 [N] at 0.005 [s]

Min: -918.1 [N] at 0.089 [s]



**LATERAL THORAX IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

2

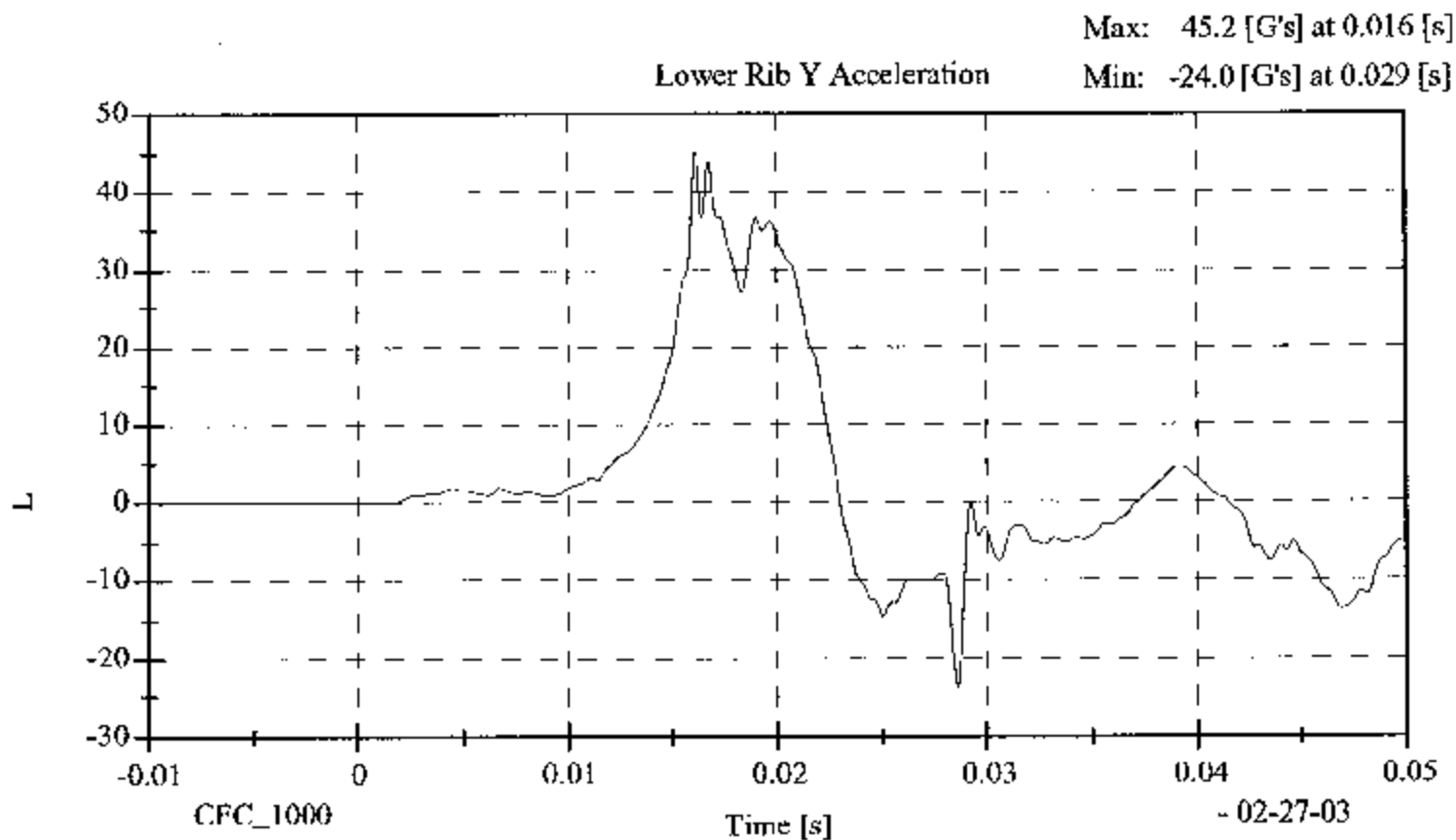
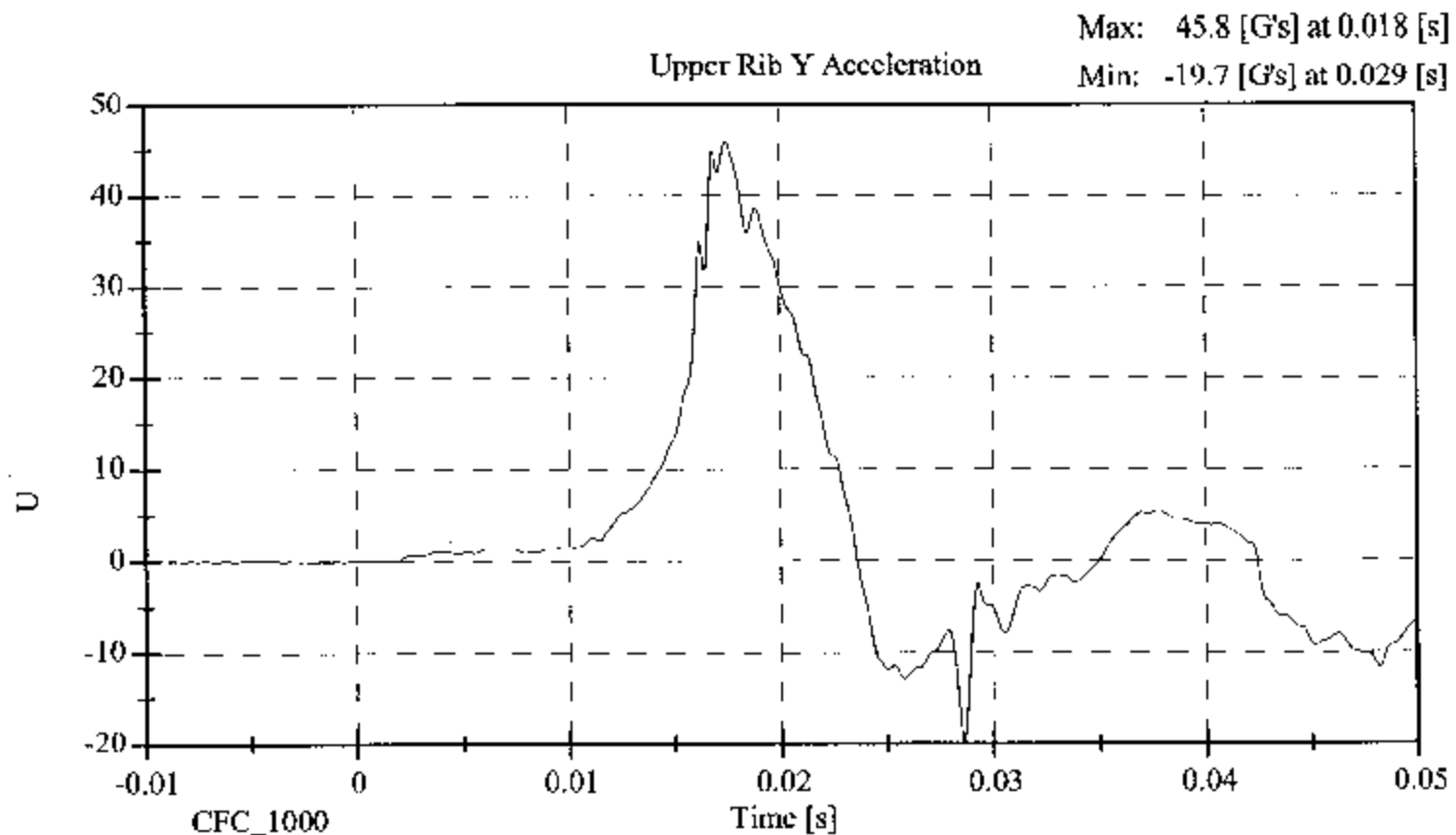
Date: February 27, 2003

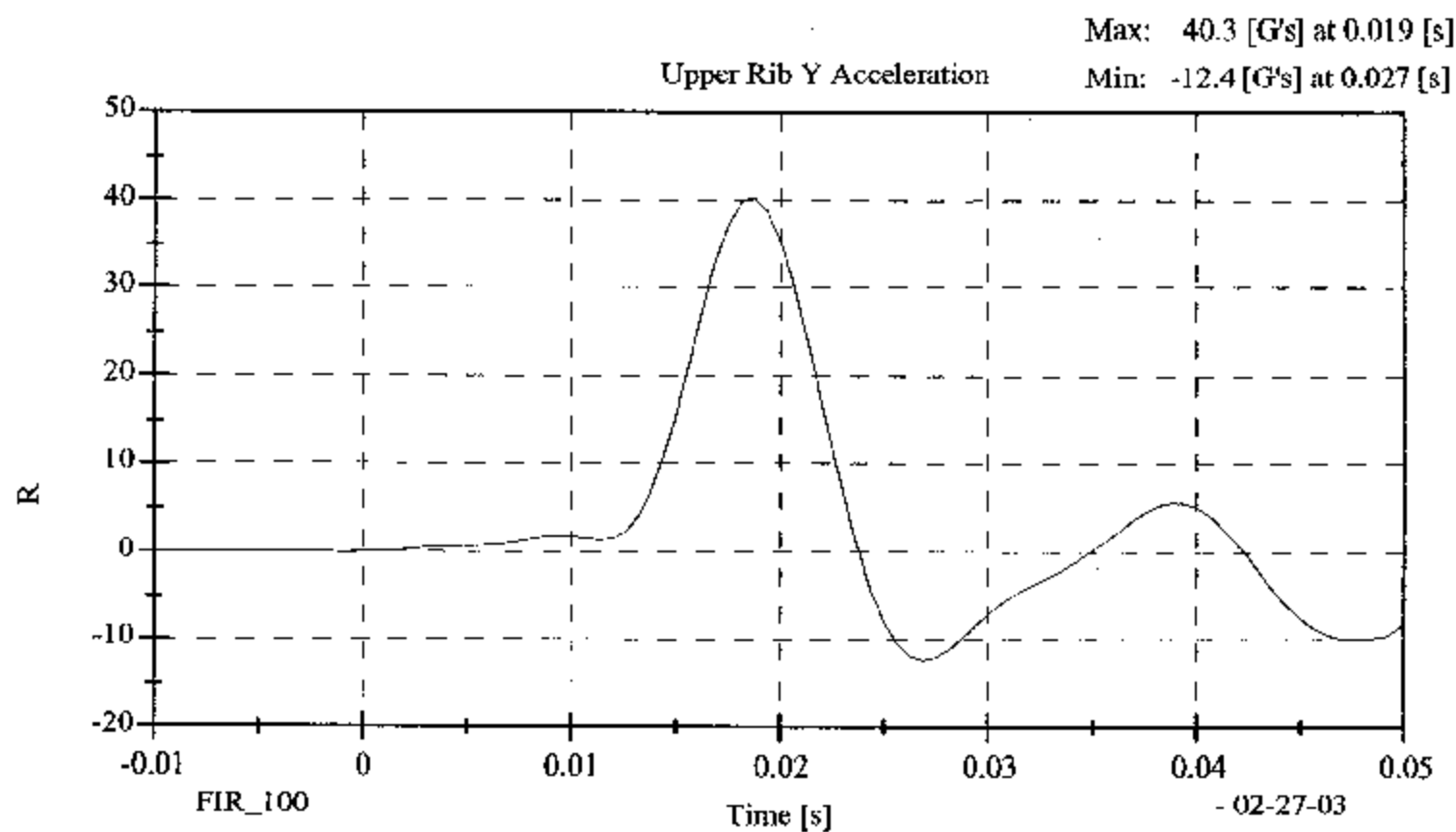
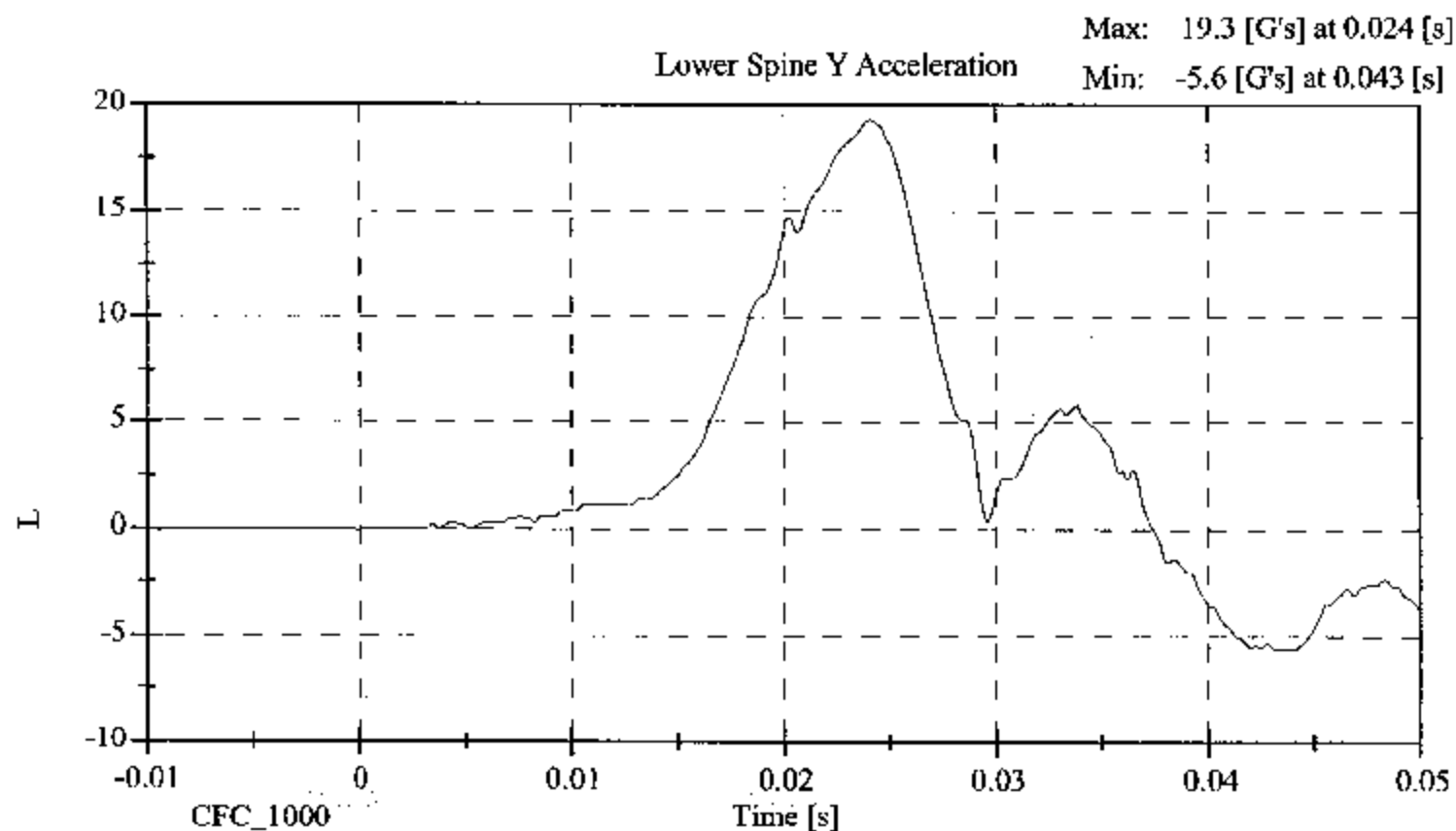
Laboratory Technician:

B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	33
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	40.32
LOWER RIB (g's)	37 - 46	38.23
LOWER SPINE (g's)	15 - 22	18.94

REMARKS: None

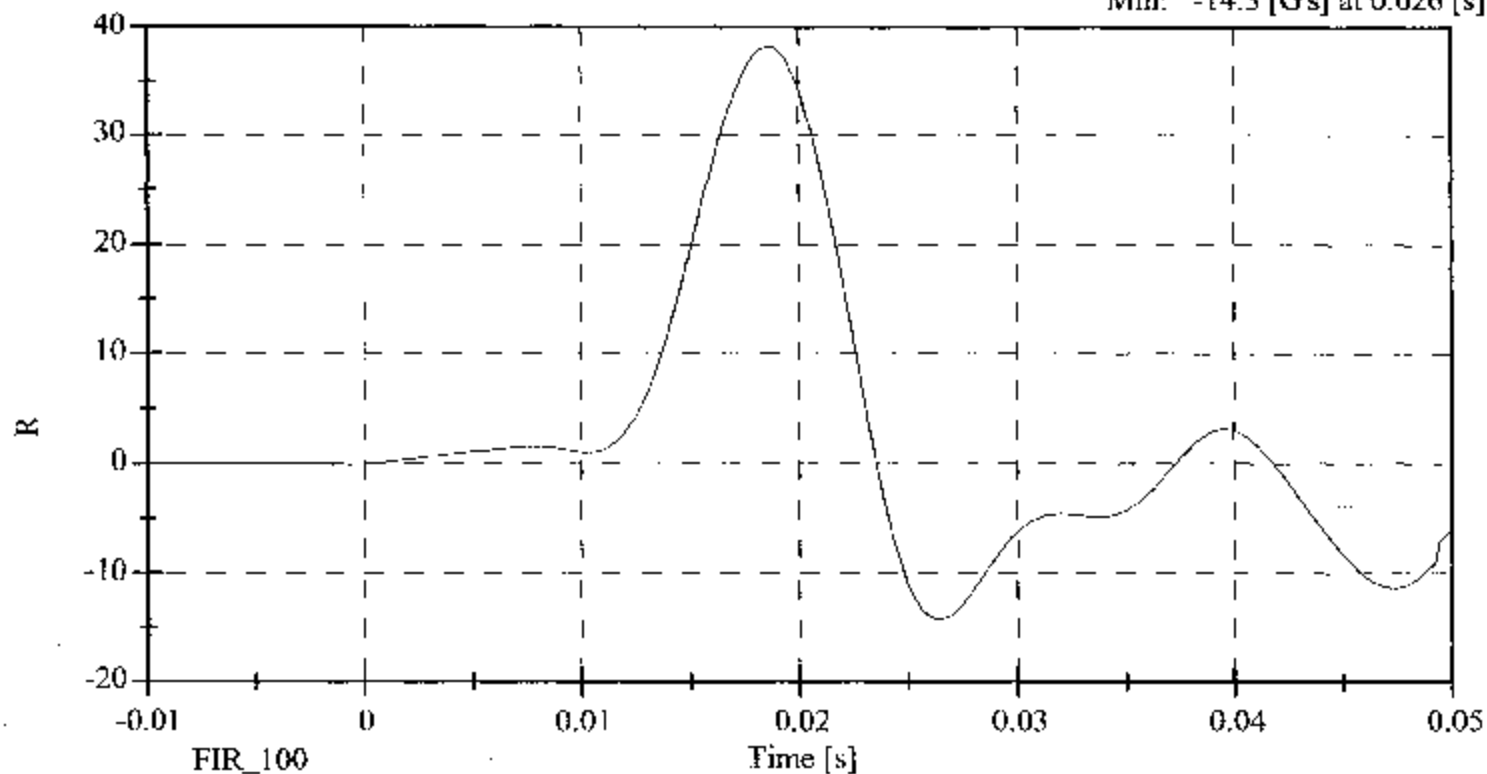




Lower Rib Y Acceleration

Max: 38.2 [G's] at 0.019 [s]

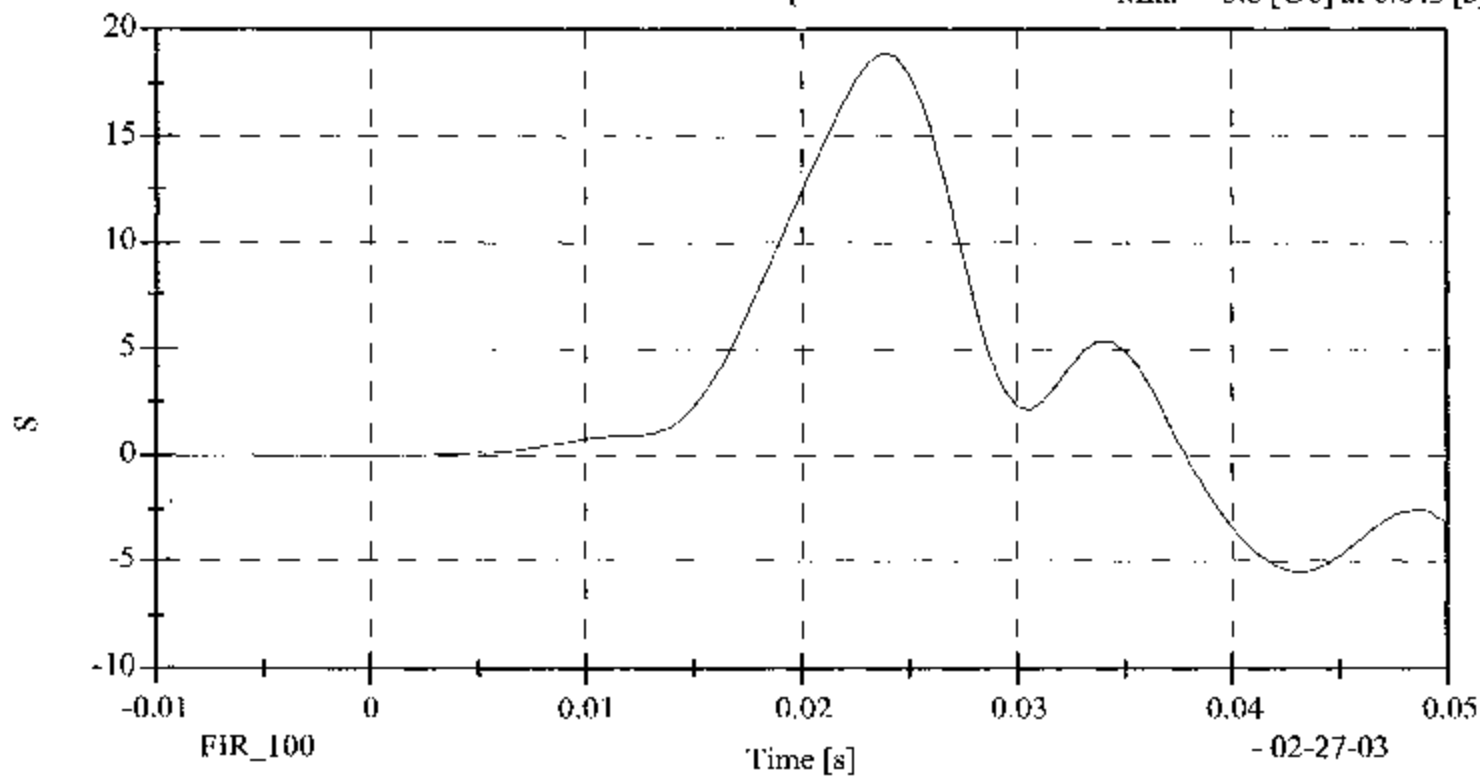
Min: -14.3 [G's] at 0.026 [s]



Lower Spine Y Acceleration

Max: 18.9 [G's] at 0.024 [s]

Min: -5.5 [G's] at 0.043 [s]



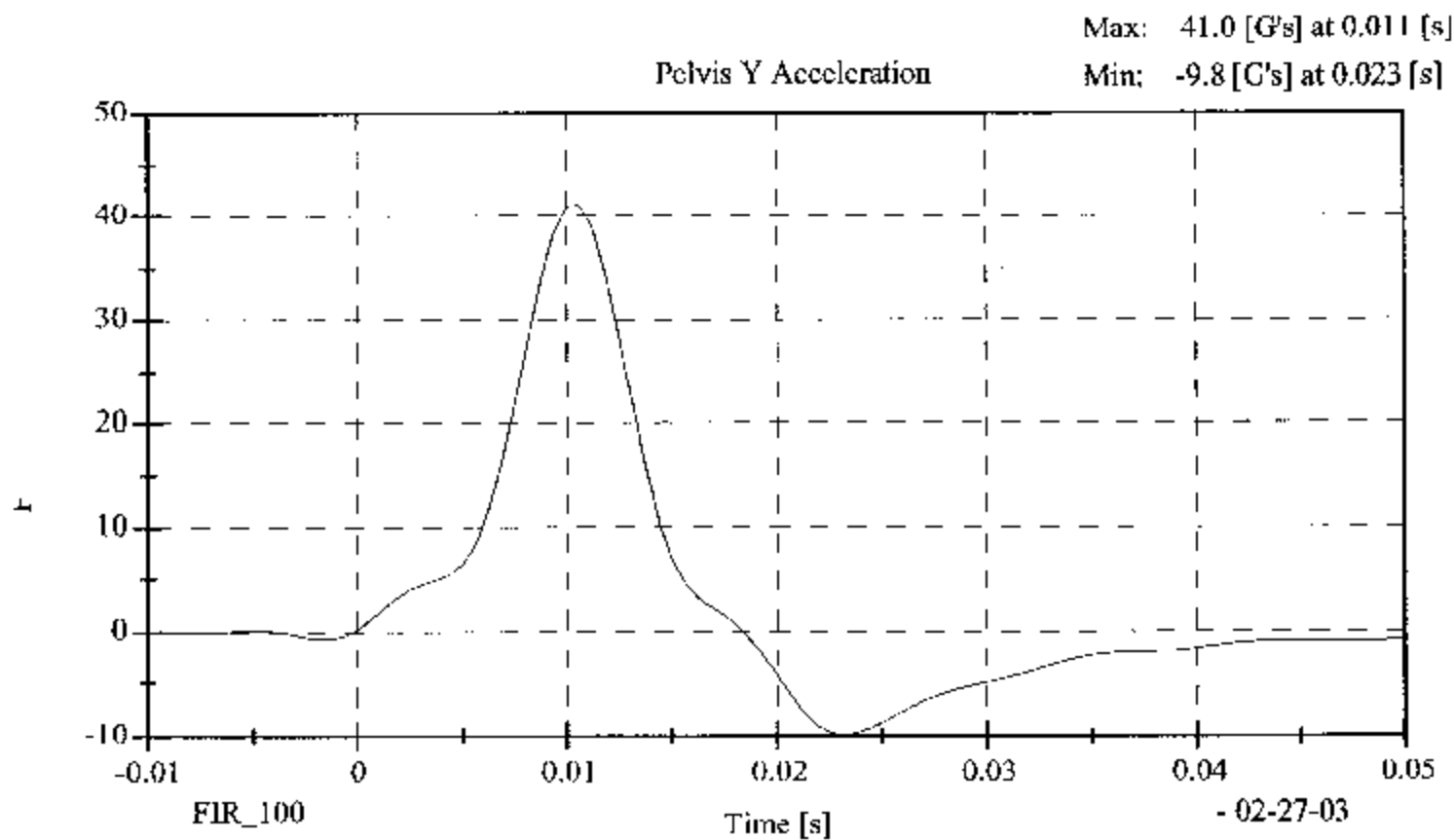
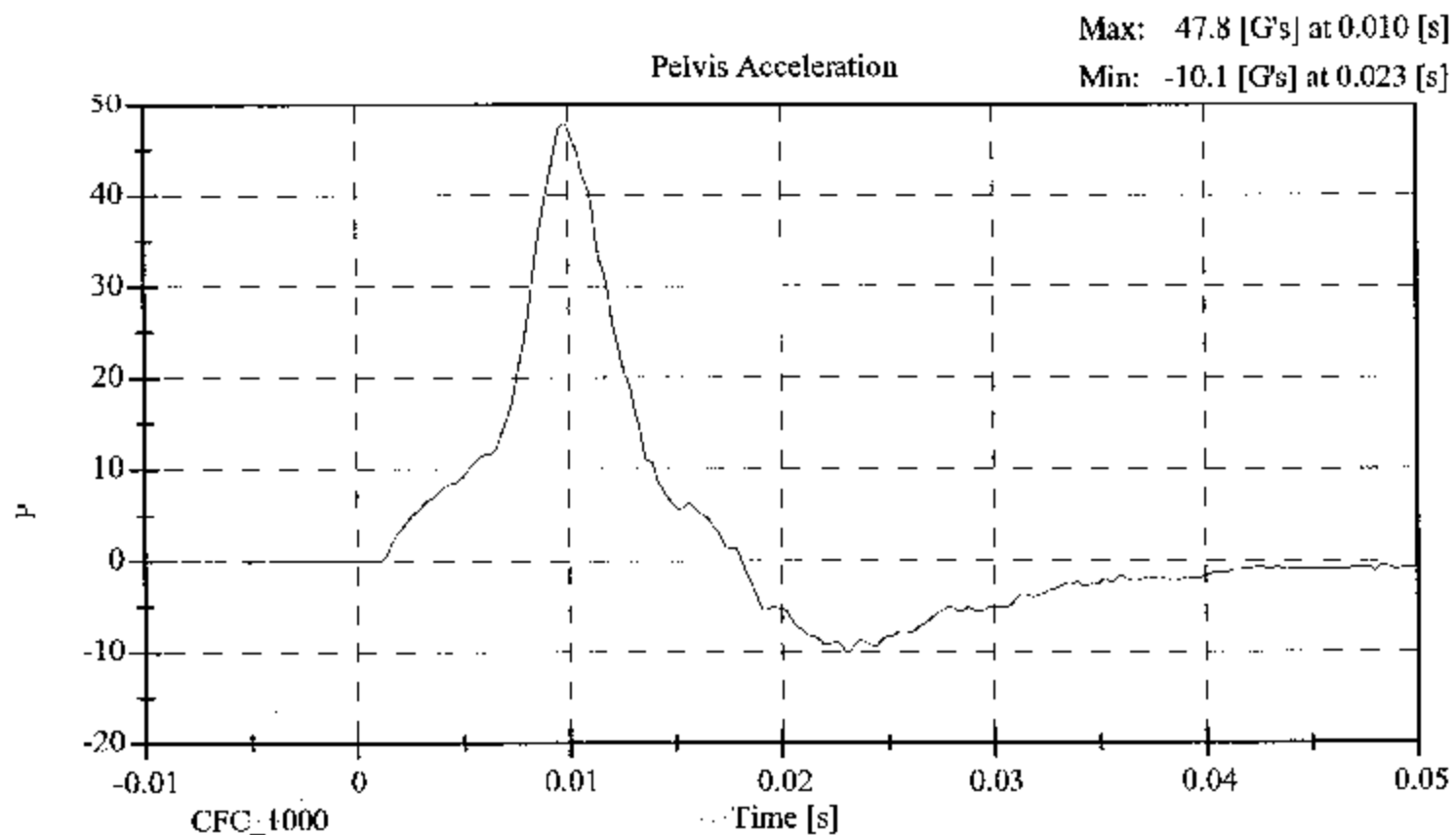
**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 2
Date: February 27, 2003 Laboratory Technician: B. Swicicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	33
PROBE SPEED (m/s)	4.27 - 4.33	4.28
PELVIS ACCELERATION (g's)	40 - 60	41.02

REMARKS: None



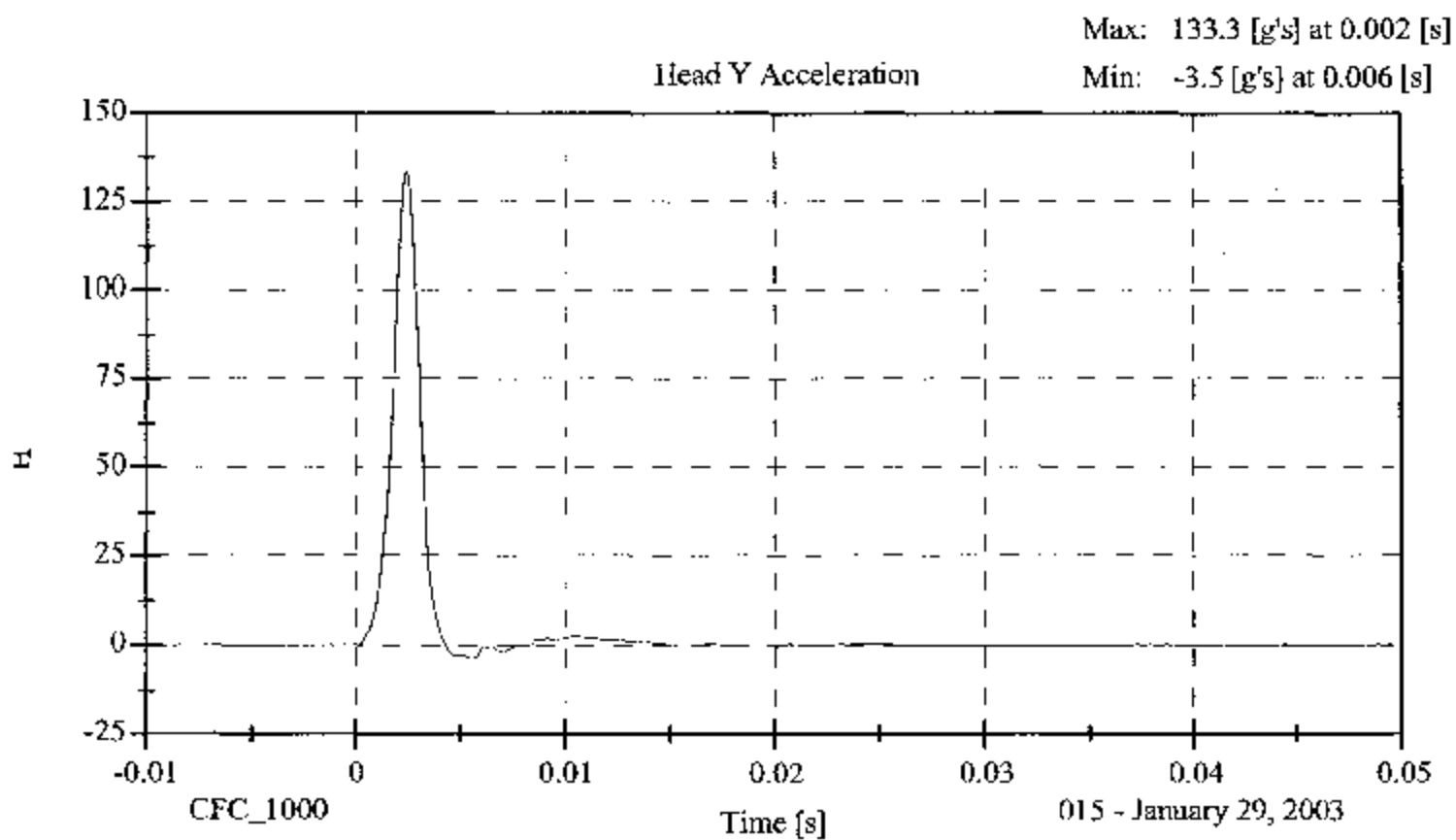
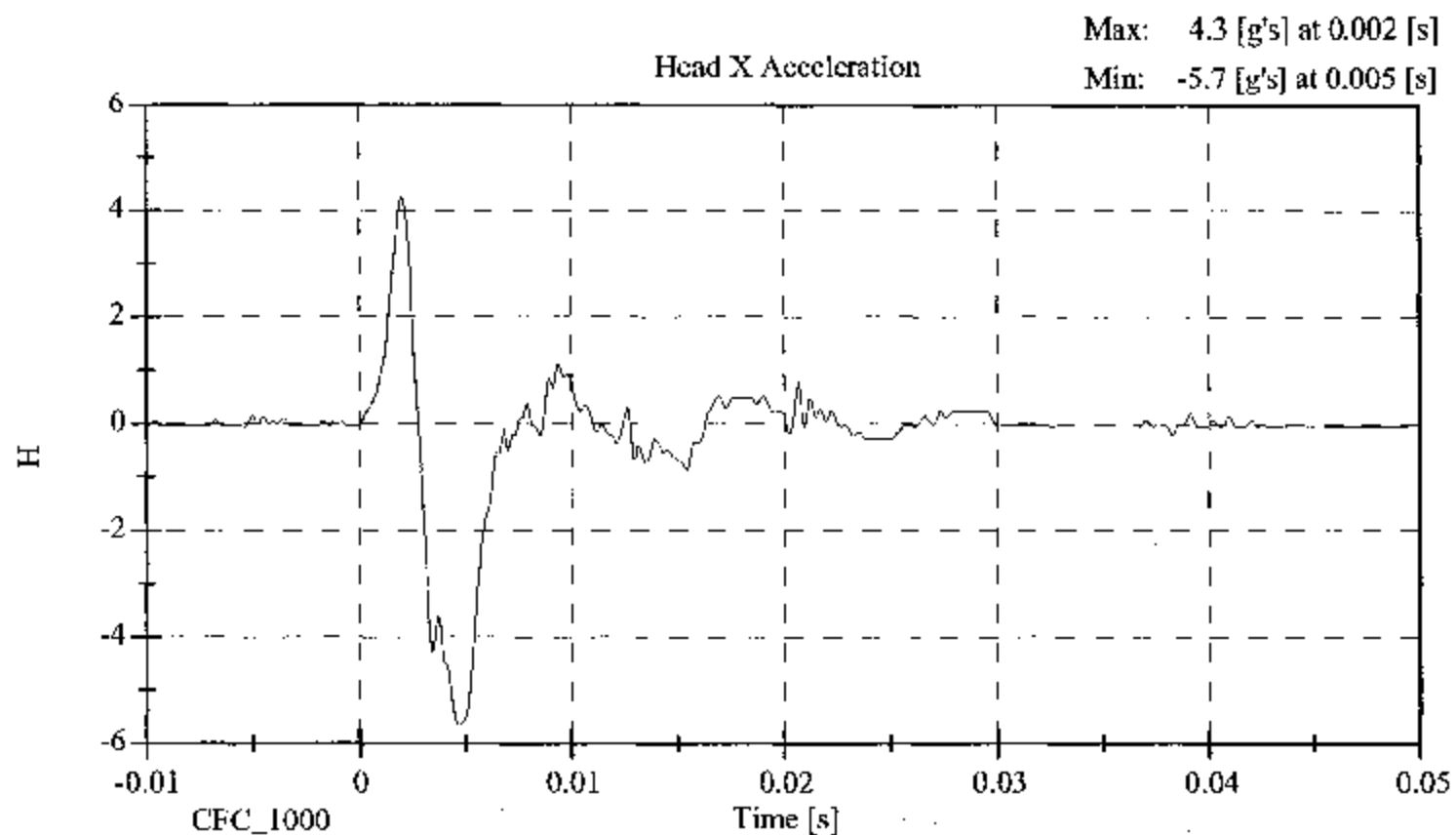
**HEAD DROP TEST
PRE-TEST**
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

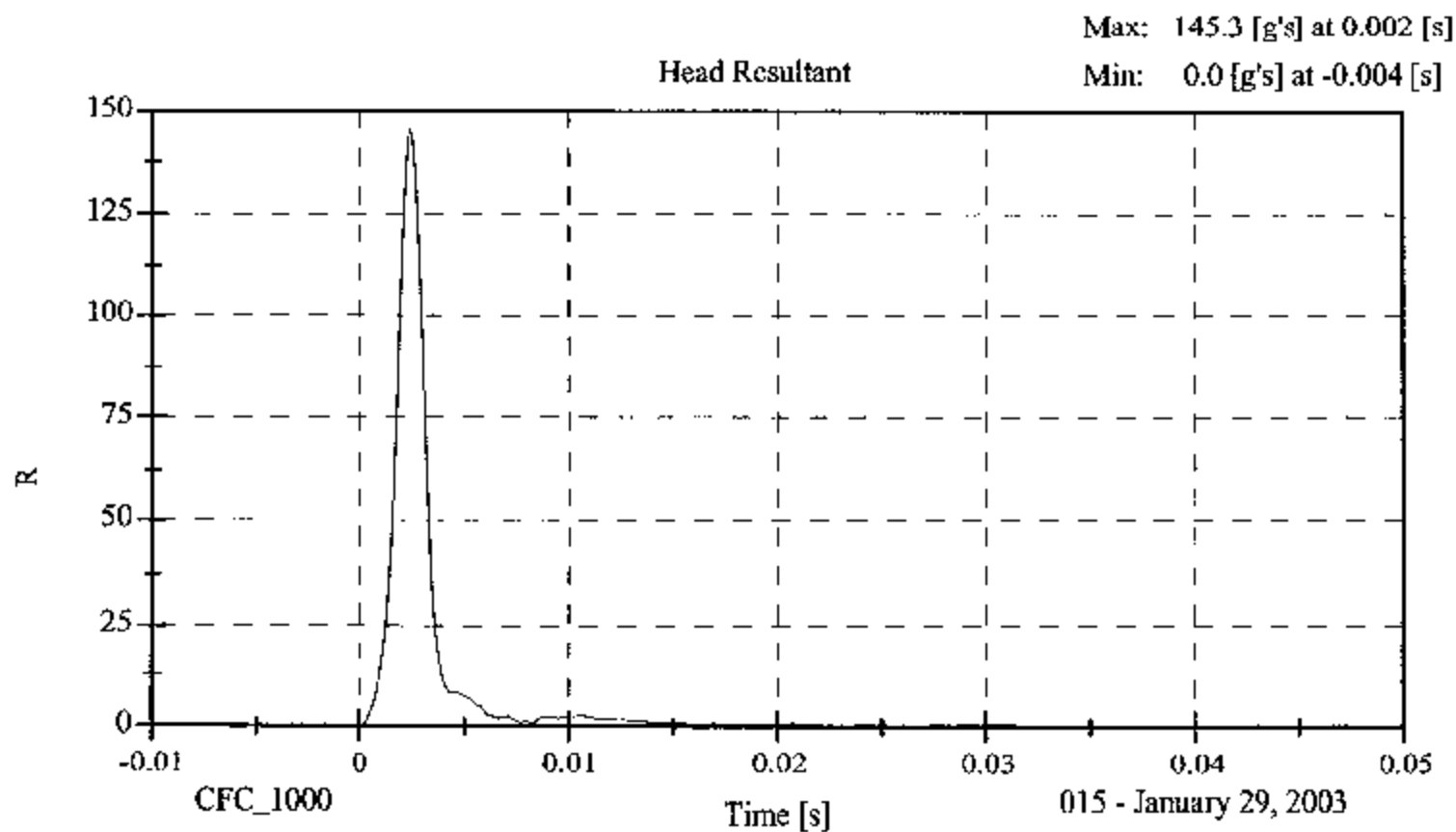
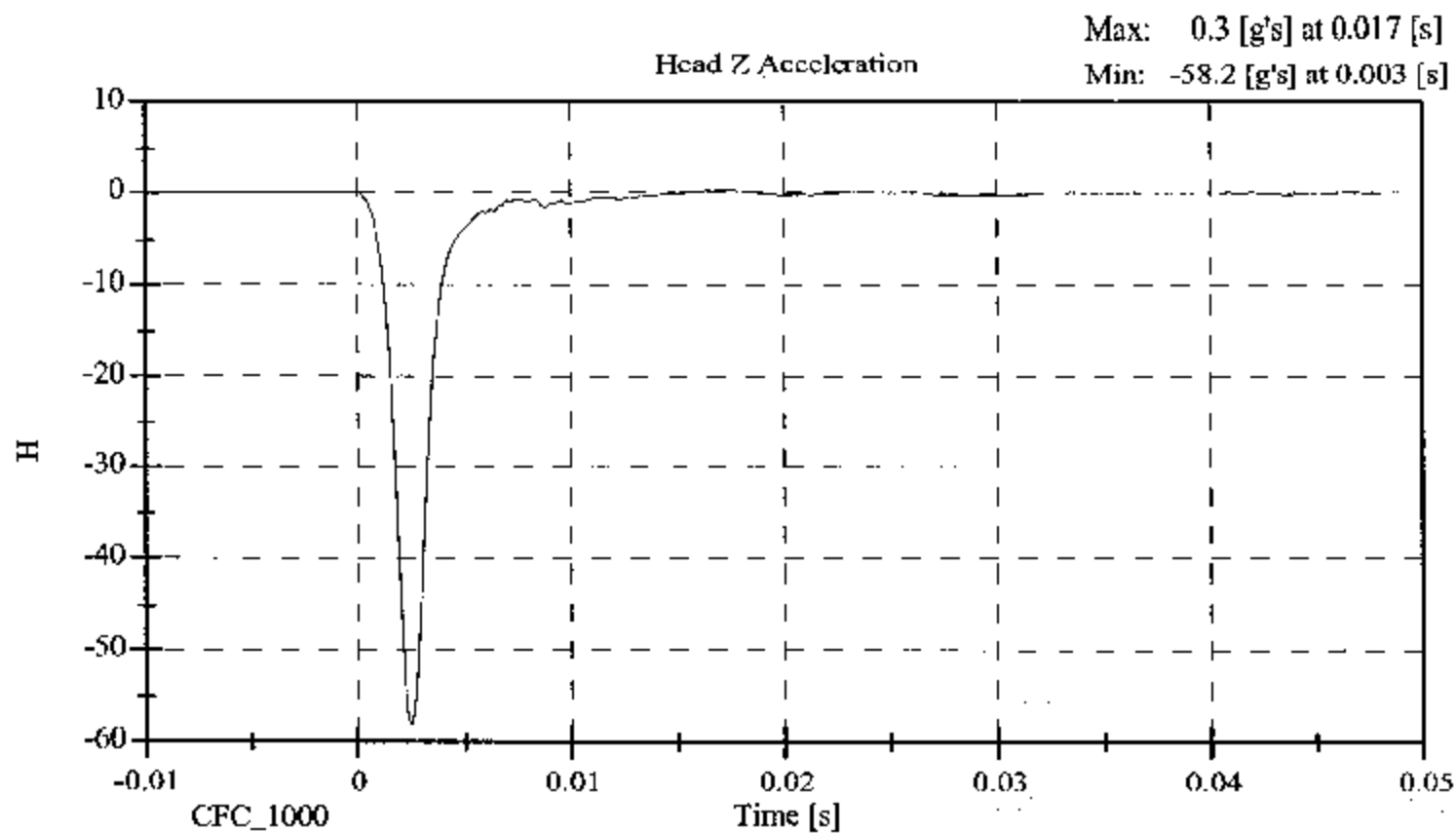
SID Serial No.: 015 Sequential Test Number: 2
Date: February 4, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	20.6 – 22.2	21.1
RELATIVE HUMIDITY (%)	10 – 70	34.00
PEAK RESULTANT ACCELERATION (Gs)	120 – 150	145.26
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 15	4.27
CURVE PERCENT NONMODAL (%)	< 15	5.45

REMARKS: None



015 - January 29, 2003



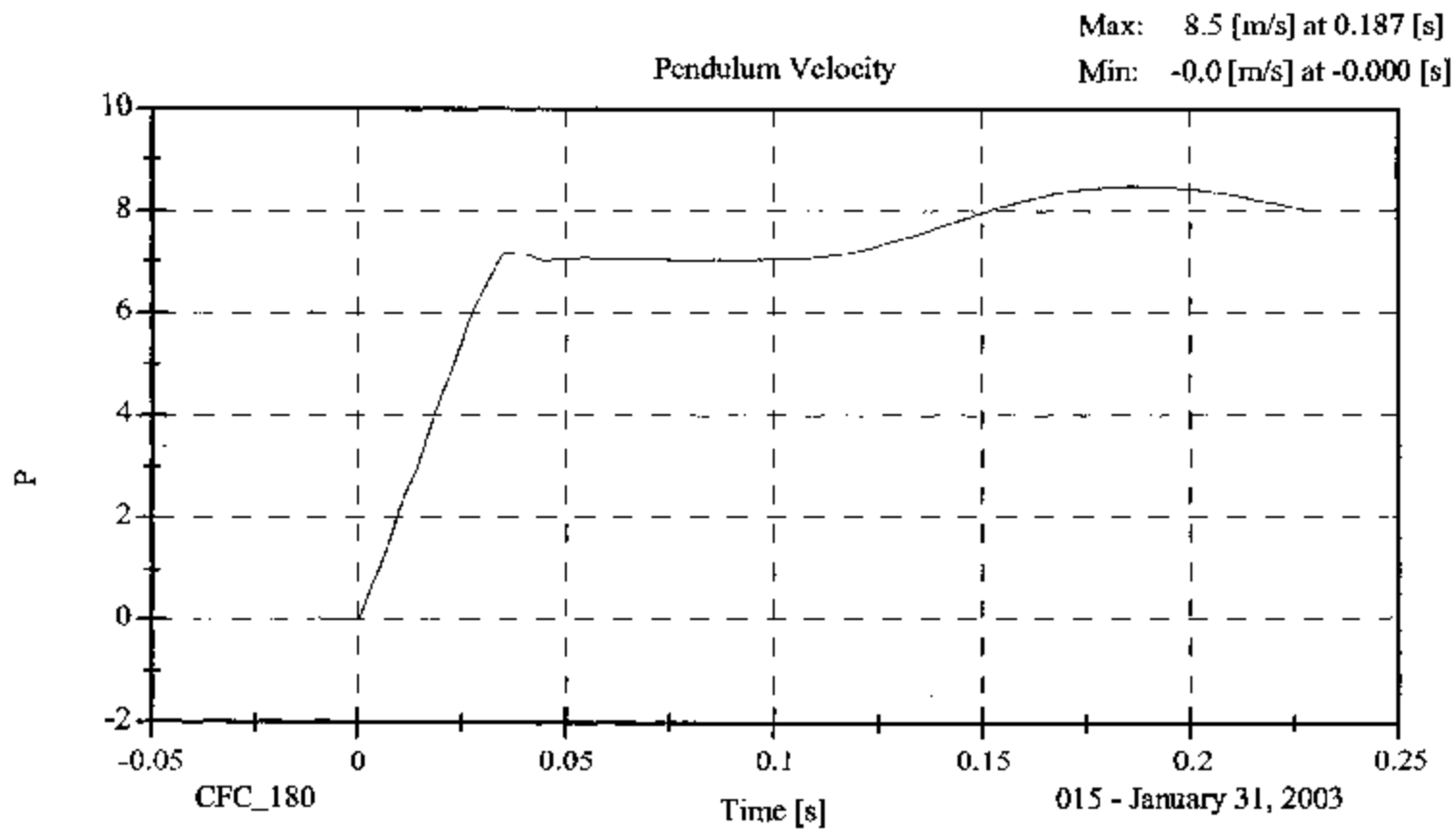
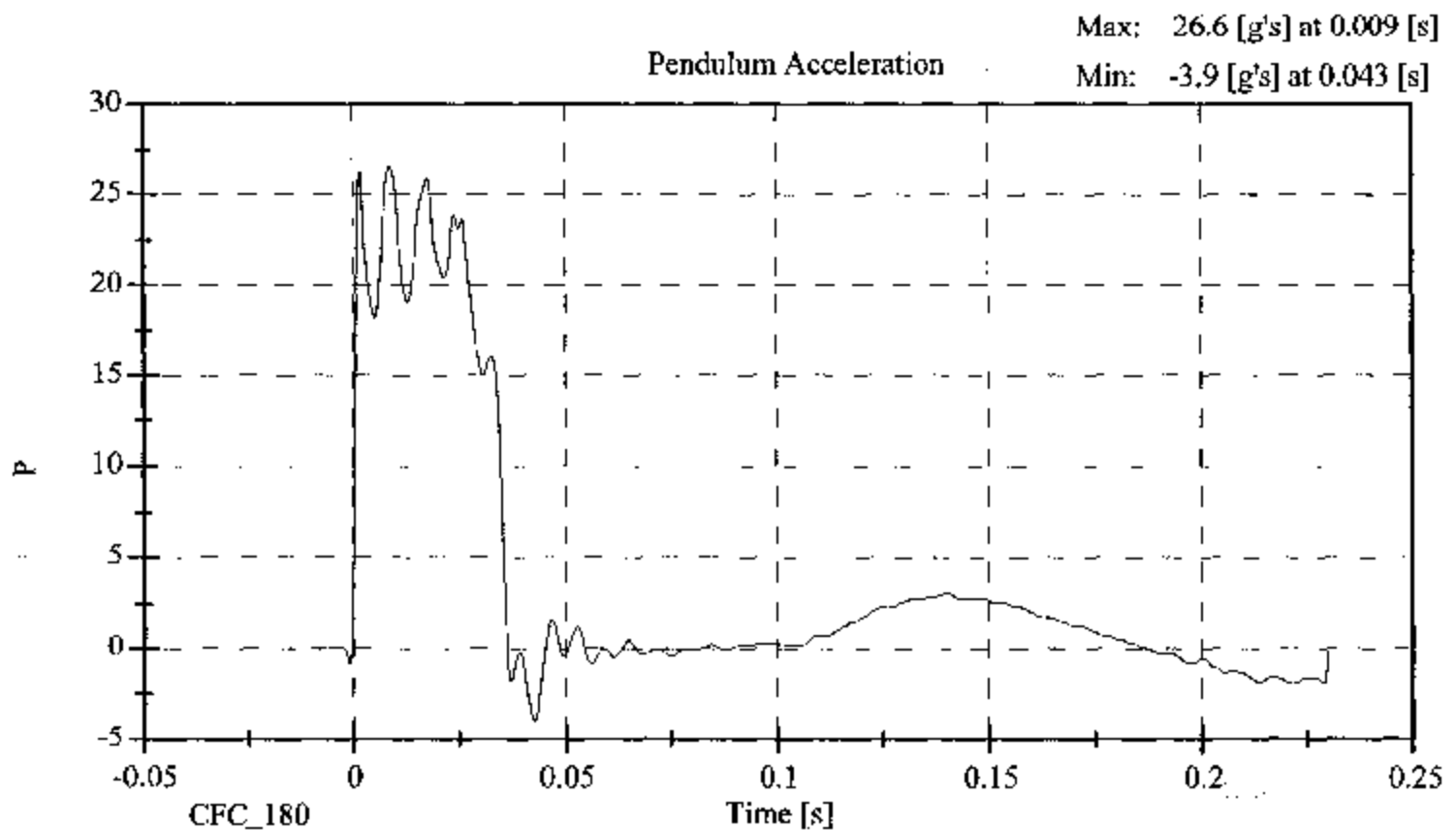
LATERAL NECK BENDING TEST
PRE-TEST
 (Test not required for SID certification)

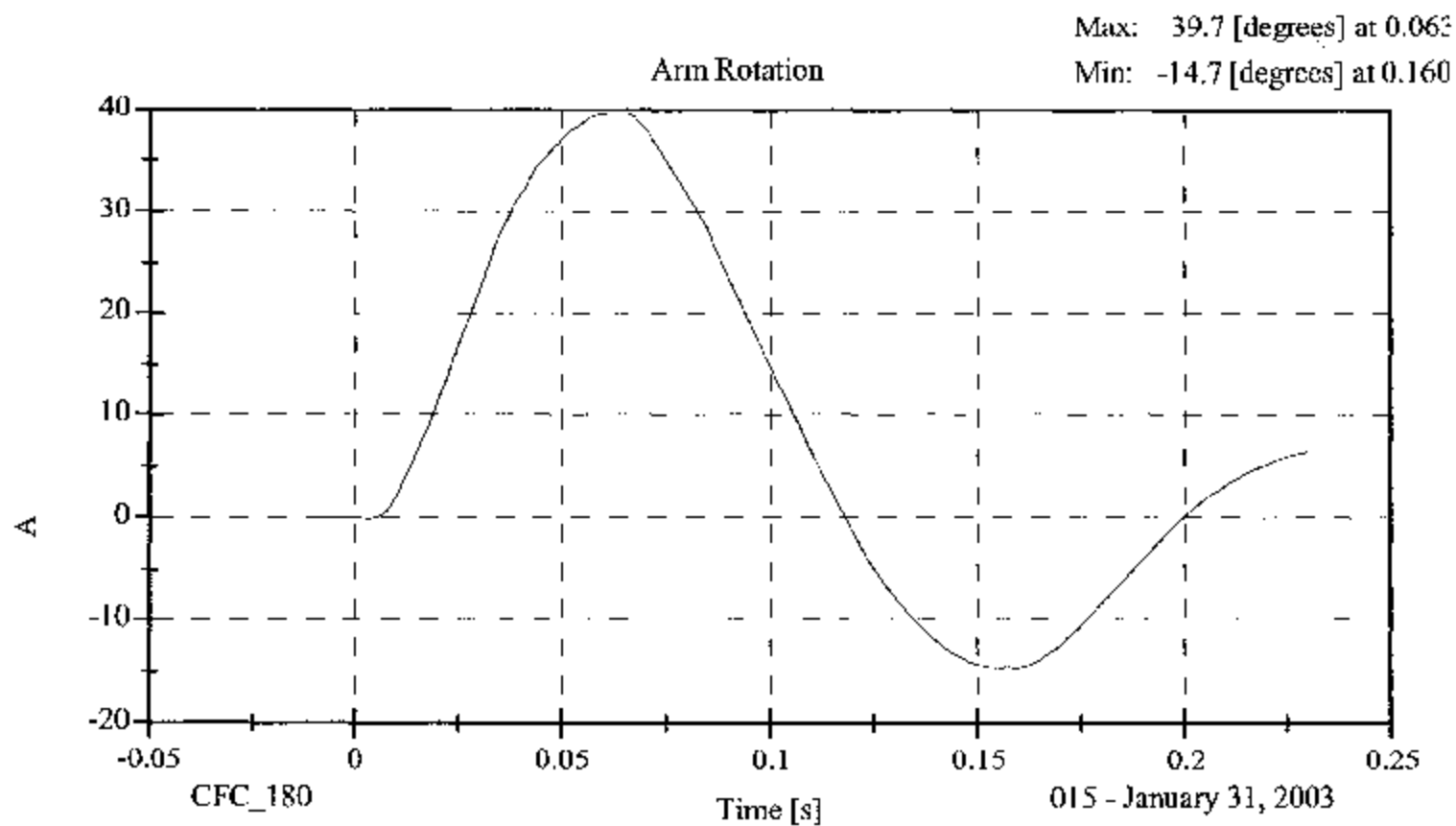
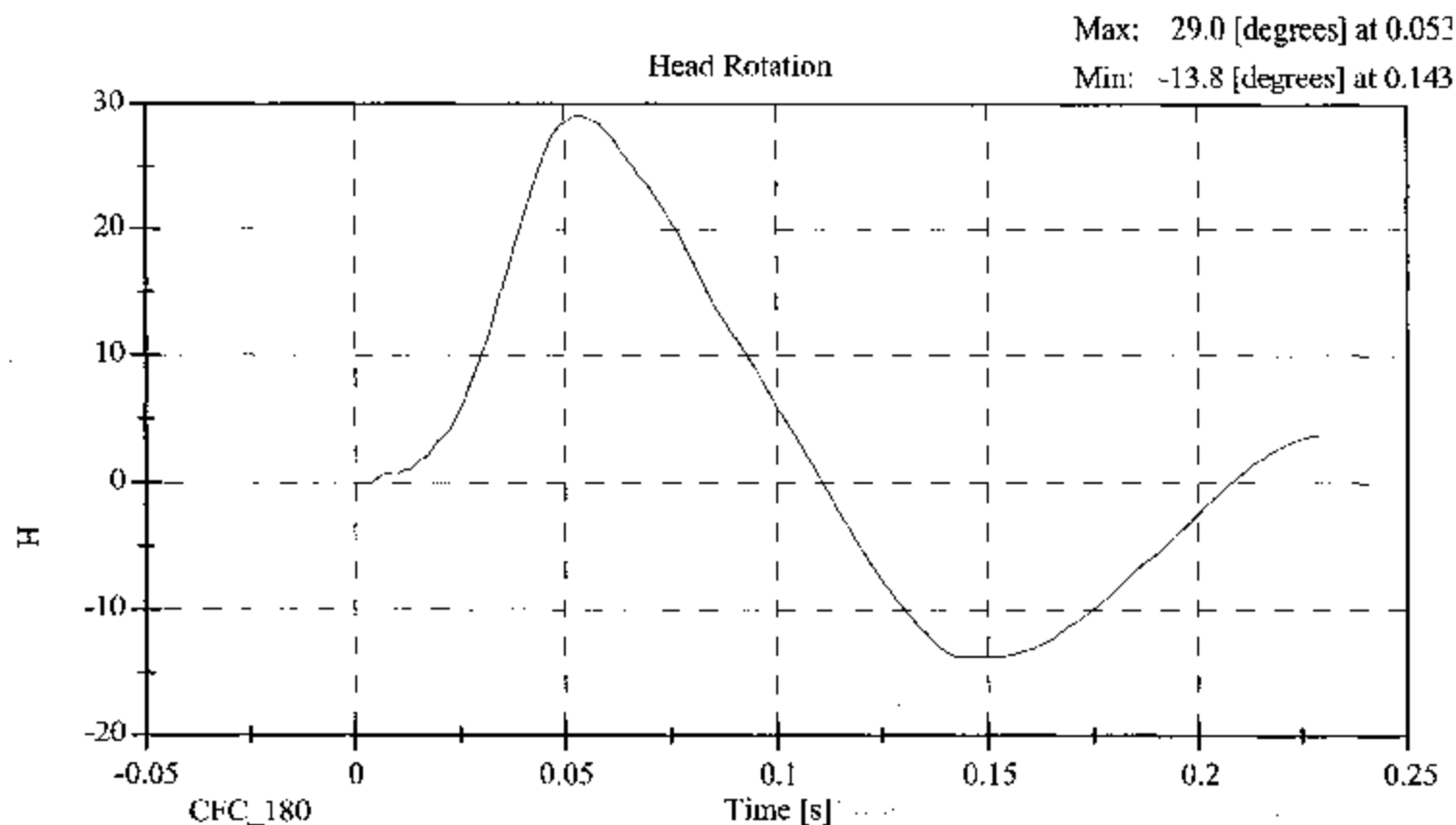
CONFIGURED FOR LEFT SIDE IMPACT

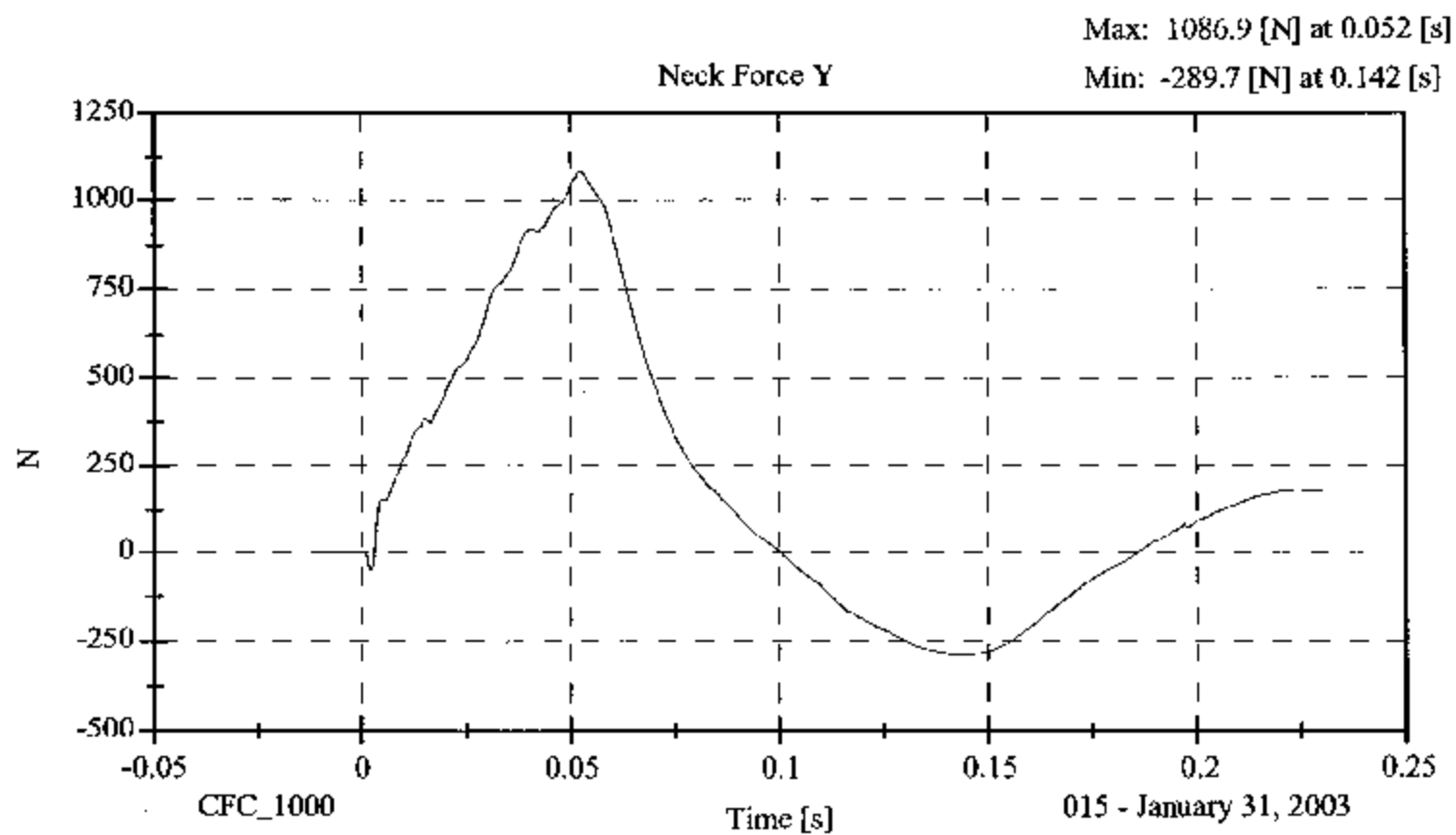
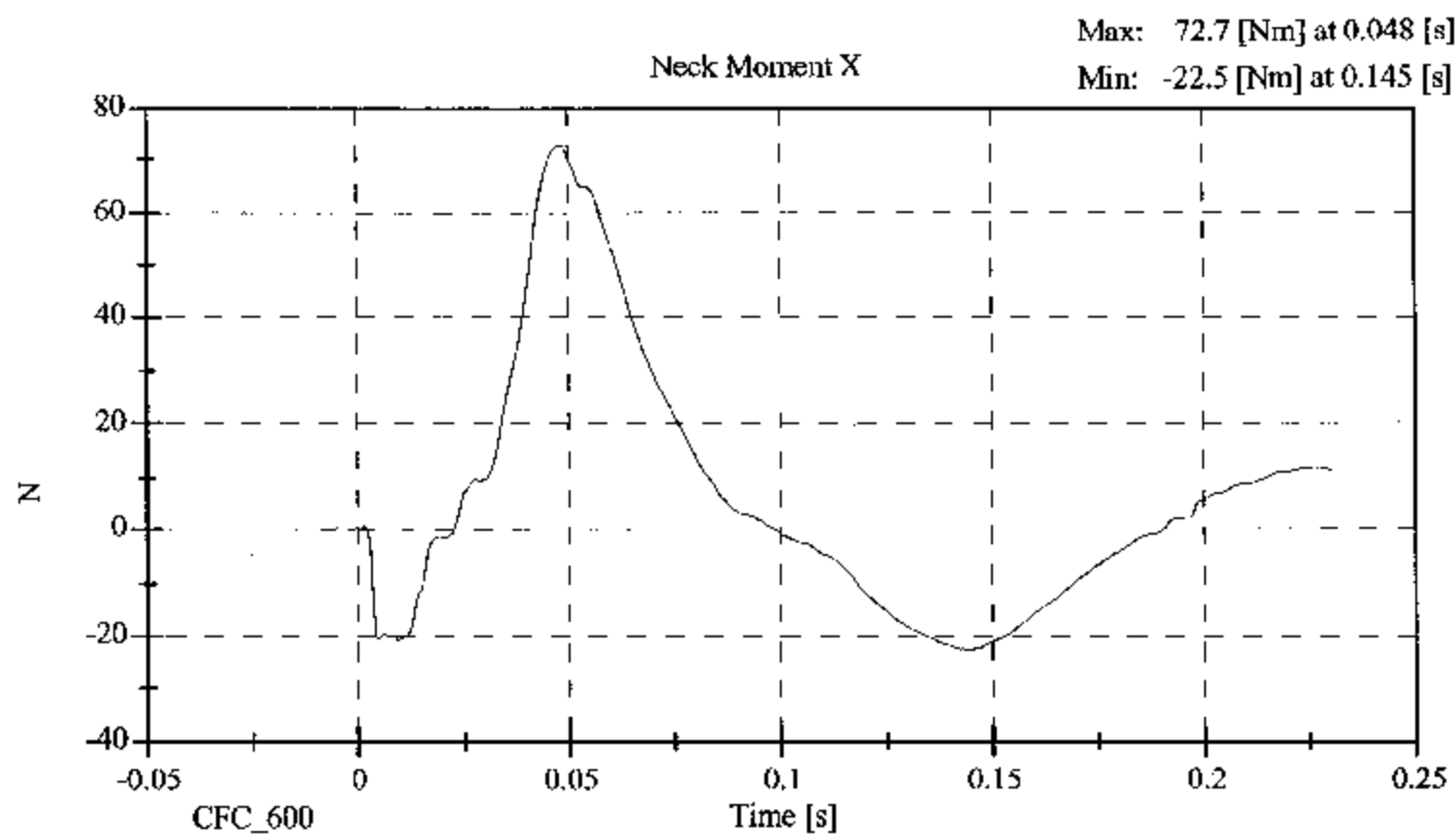
SID Serial No : 015 Sequential Test Number: 2
 Date: February 4, 2003 Laboratory Technician: H. Swjecicki

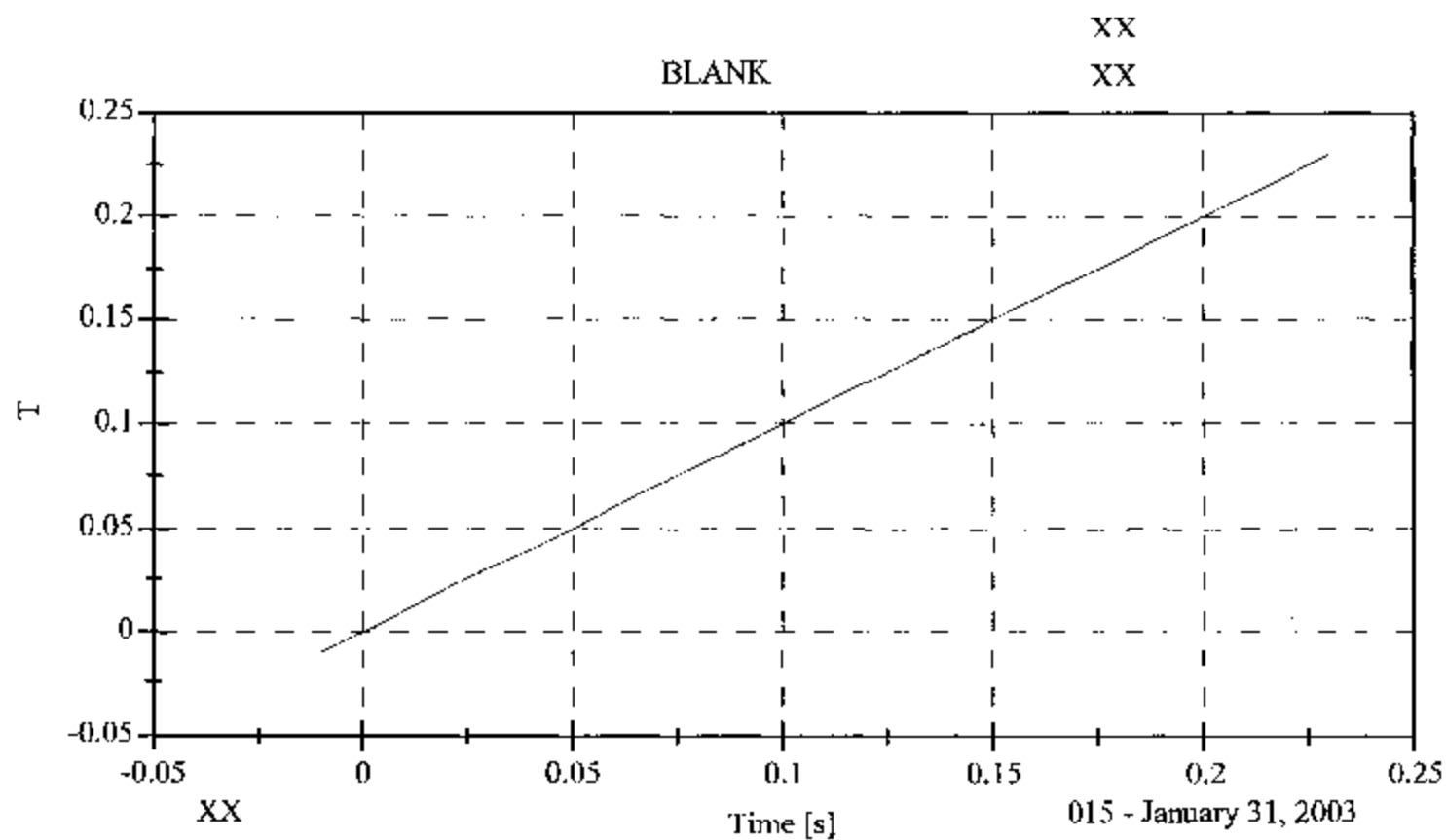
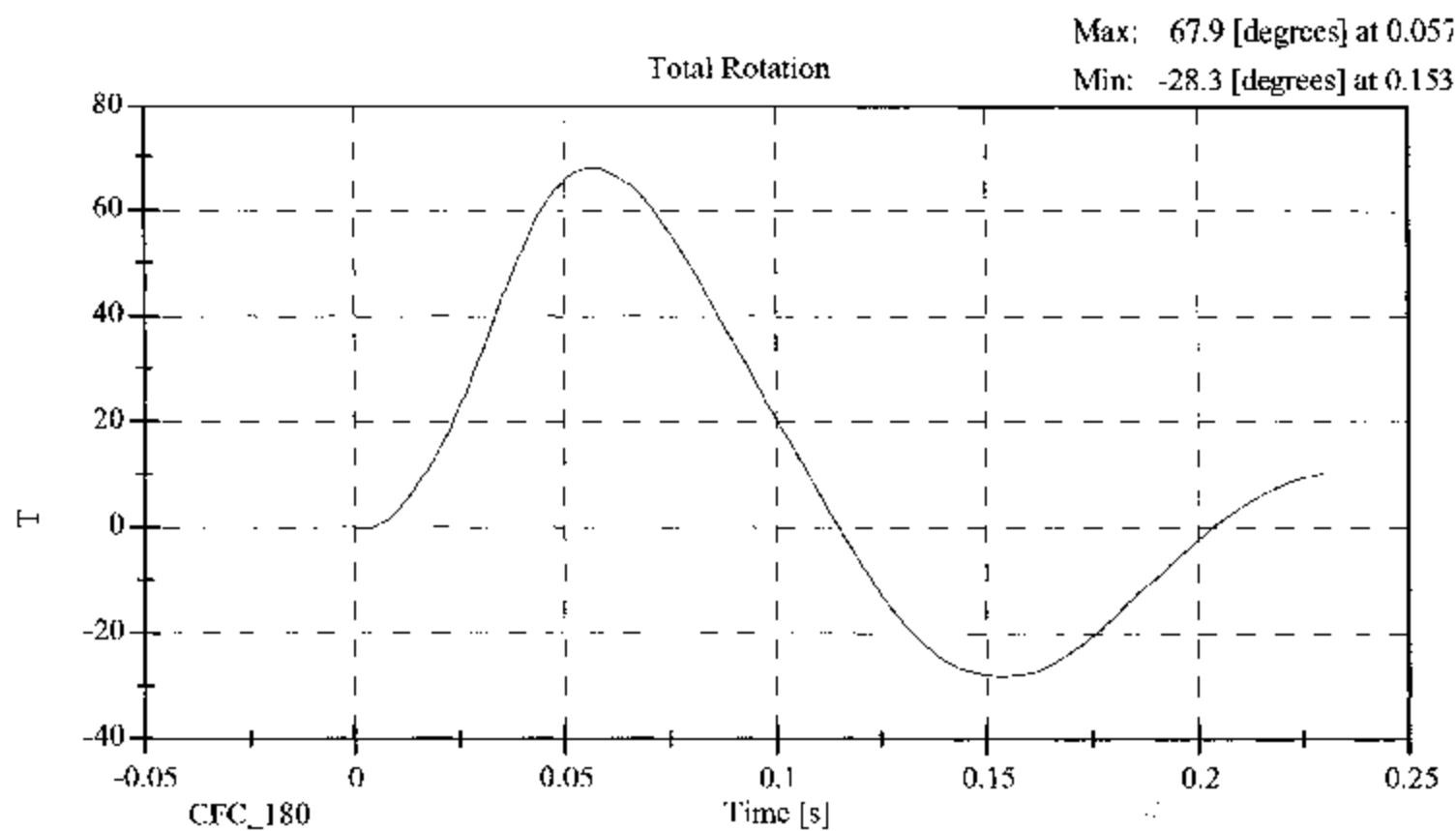
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	20.6 - 22.2	21.1
RELATIVE HUMIDITY (%)	10 - 70	33.00
IMPACT VELOCITY (m/s)	6.89 - 7.13	6.98
PENDULUM DELTA V		
DELTA V @ 10 ms (m/s)	1.96 - 2.55	2.13
DELTA V @ 20 ms (m/s)	4.12 - 5.10	4.34
DELTA V @ 30 ms (m/s)	5.73 - 7.01	6.39
DELTA V @ 40-70 ms (m/s)	6.27 - 7.64	7.18
D PLANE ROTATION		
MAXIMUM ROTATION (deg)	64 - 78	67.88
ROT. ANGLE TIME to ZERO (ms)	50 - 70	57.70
MOMENT ABOUT THE OCCIPITAL CONDYLE		
MAX OCCIPITAL MOMENT (Nm)	88 - 108	90.34
OCCIPITAL MOMENT DECAY (ms)	40.0 - 60.0	50.80
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT		
ROTATION wrt MOMENT (ms)	0 - 20	9.30

REMARKS: None









ABDOMINAL COMPRESSION TEST**PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACTSID H3 Serial No.: 015Sequential Test Number: 2Date: February 28, 2003Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 13 mm (N)	104 - 162	116.5
FORCE @ 19 mm (N)	163 - 221	186.8
FORCE @ 25 mm (N)	222 - 280	270.9
FORCE @ 33 mm (N)	325 - 391	390

REMARKS: None

Dummy S/N 015

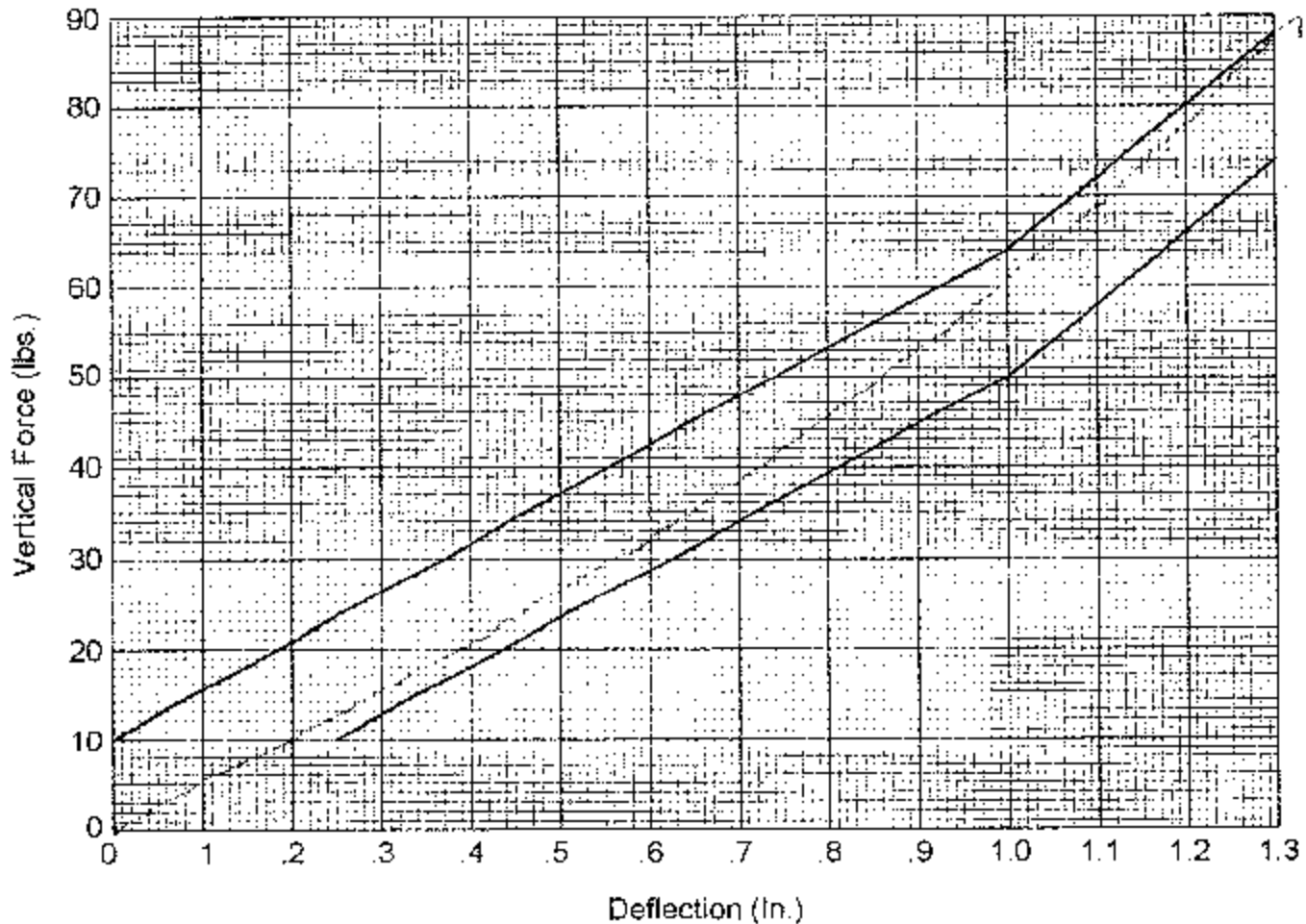
WIA _____

Date 2-28-03

Performed By [Signature]

Temp 71

Humidity 31%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

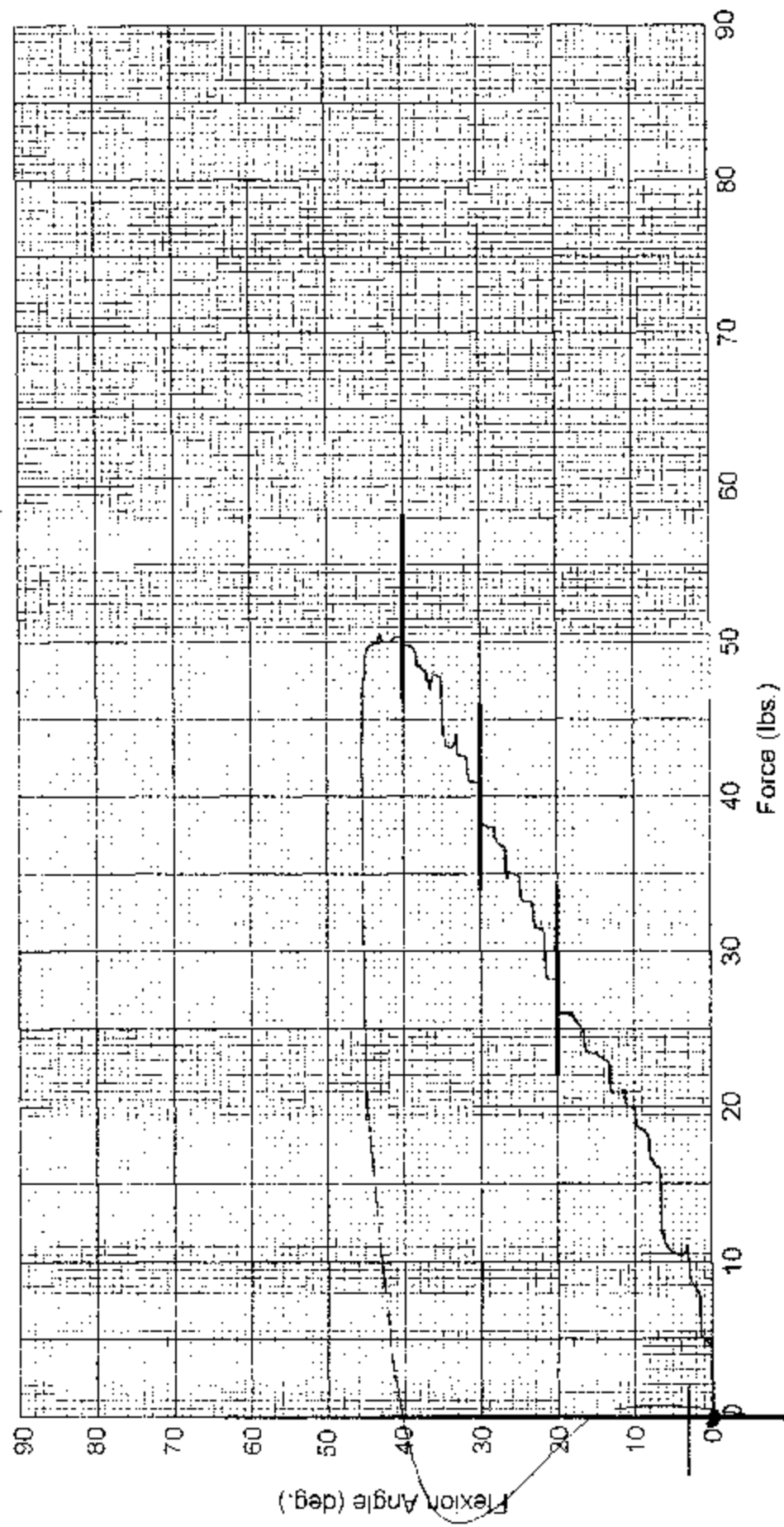
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 2
Date: February 28, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	120.5
FORCE @ 30° (N)	151.2 - 204.6	176.6
FORCE @ 40° (N)	204.6 - 258	222.9
RETURN ANGLE	12° max.	3°

REMARKS: None

Dummy S/N - 015
 W/A
 Date - 2-28-03
 Performed By [Signature]
 Temp. 71°
 Humidity 31%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 2
 Date: February 29, 2003 Laboratory Technician: B. Swicicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PFI VIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 2
Date: February 28, 2003 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 2
Date: February 28, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	368

REMARKS: None

THORACIC SHOCK ABSORBER TESTS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 2
Date: February 3, 2003 Laboratory Technician: B. Swiecicki

DAMPER IDENTIFICATION: _____

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	29
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	951.92
	DISPLACEMENT (mm)	30 - 35	34.41
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1877.47
	DISPLACEMENT (mm)	32 - 37	36.94
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	4426.58
	DISPLACEMENT (mm)	33 - 40	39.14

DAMPER SETTING: 5 _____

REMARKS: None

016 Shock Low at 3.05 m/s

Low Part 572F Shock Absorber Impact

Serial No: 016

Calibration Date:

02-03-03

Work File:

016SL 2-03-03

TEST RESULTS

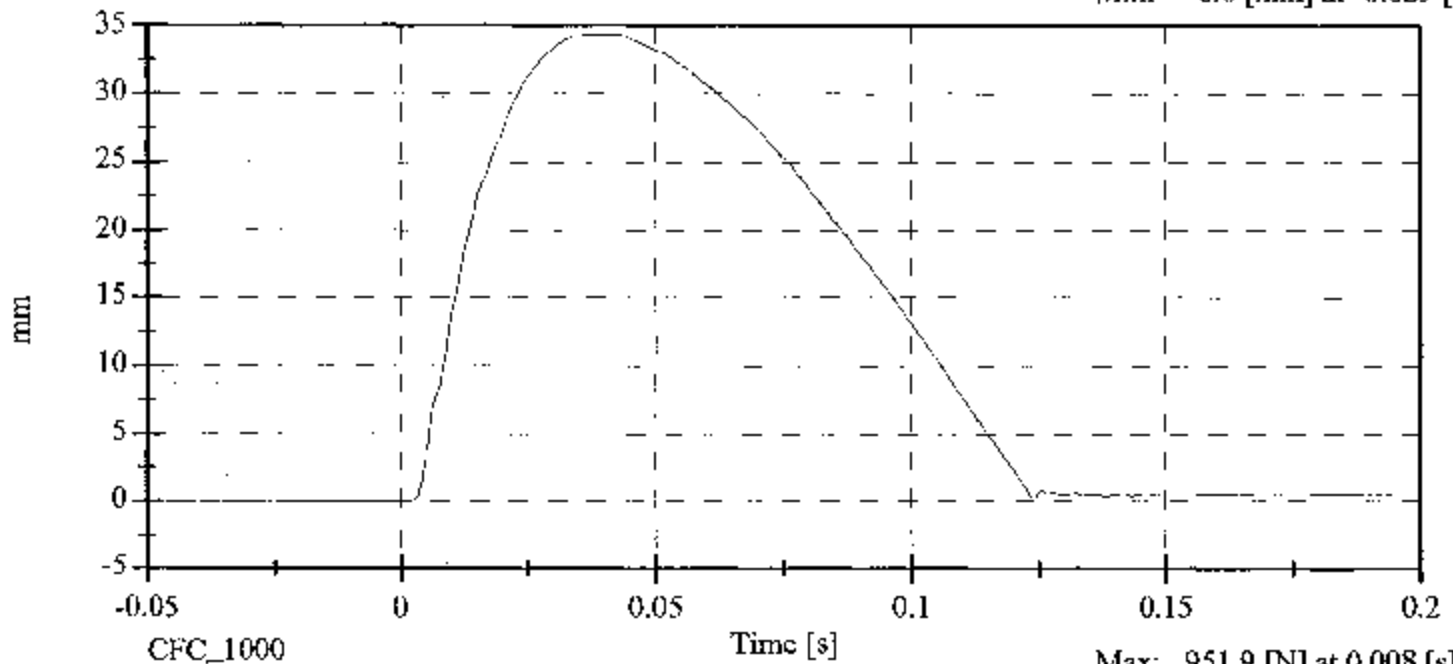
TEST CONDITION	PARAMETERS	RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Displacement:	30.00-35.00 mm	34.41 mm	Passed
Maximum Force:	836.00-1125.00 N	951.92 N	Passed

016 Shock Low

Displacement vs. Time

Max: 34.4 [mm] at 0.037 [s]

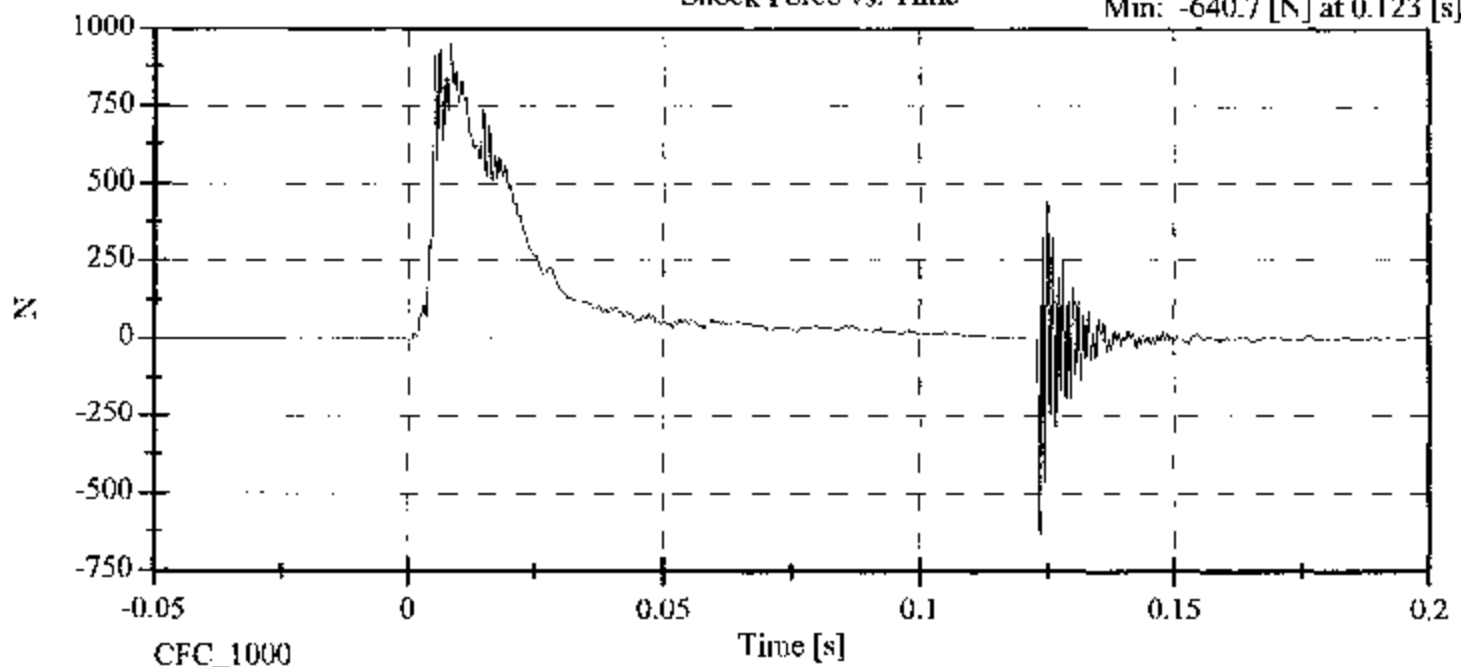
Min: -0.0 [mm] at -0.029 [s]



Shock Force vs. Time

Max: 951.9 [N] at 0.008 [s]

Min: -640.7 [N] at 0.123 [s]



016 Shock Medium at 4.27 m/s

Medium Part 572F Shock Absorber Impact

Calibration Date:

02-03-03

Serial No: 016

Work File:

016SM 2-03-03

TEST RESULTS

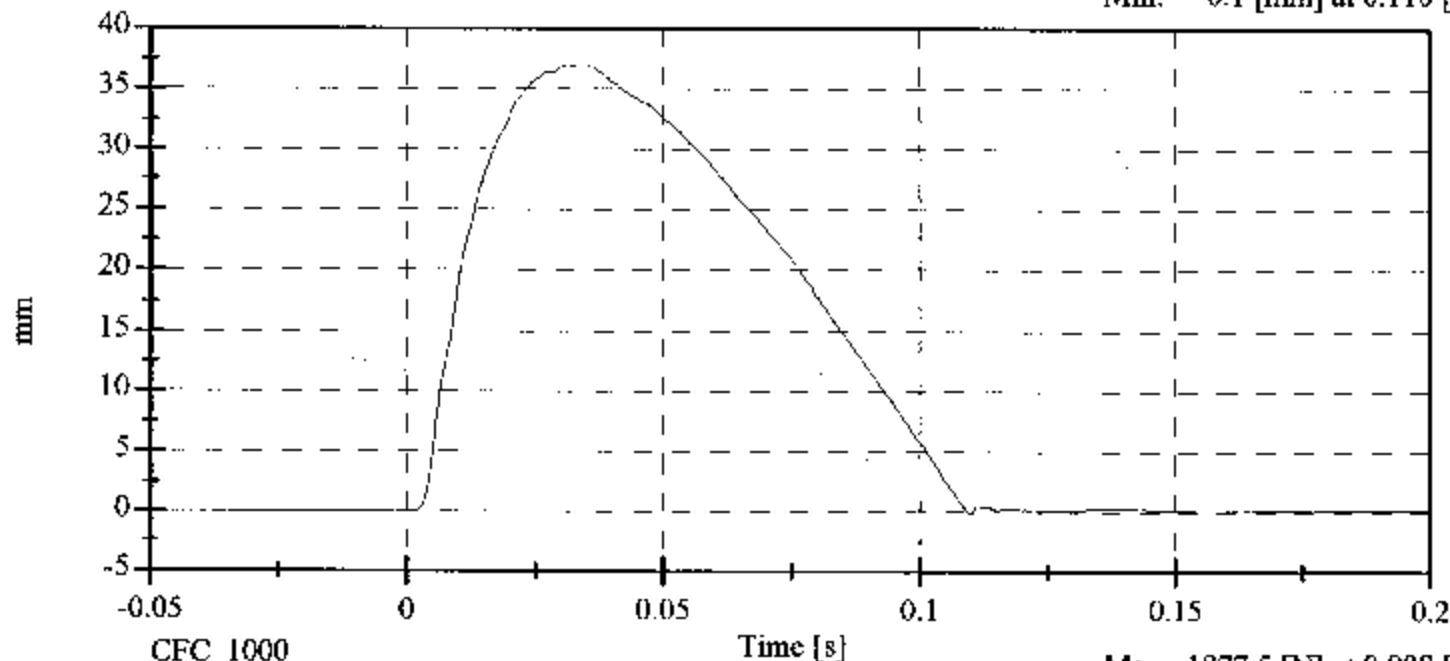
TEST CONDITION	PARAMETERS	RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Displacement:	32.00-37.00 mm	36.94 mm	Passed
Maximum Force:	1730.00-2099.00 N	1877.47 N	Passed

016 Shock Medium

Displacement vs. Time

Max: 36.9 [mm] at 0.033 [s]

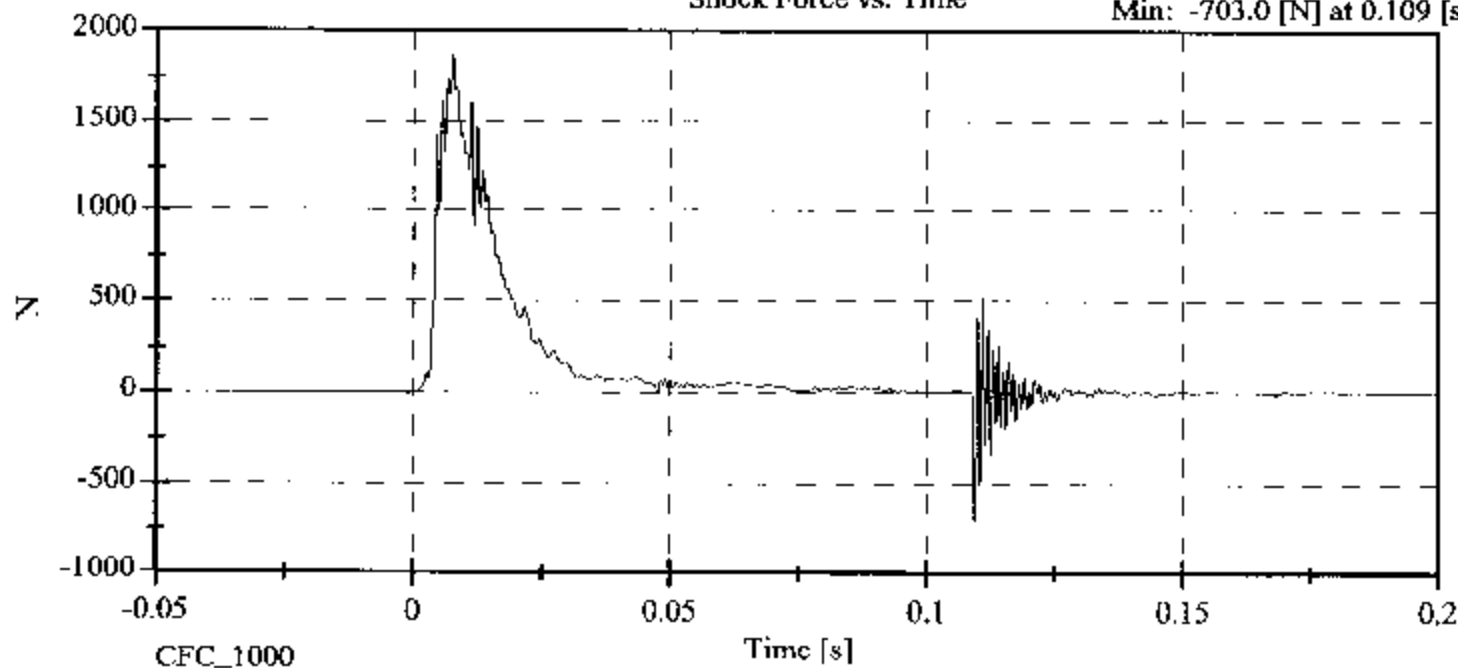
Min: -0.1 [mm] at 0.110 [s]



Shock Force vs. Time

Max: 1877.5 [N] at 0.008 [s]

Min: -703.0 [N] at 0.109 [s]



016 Shock High at 6.10 m/s

High Part 572F Shock Absorber Impact

Calibration Date:

02-03-03

Serial No: 016

Work File:

016SH 2-03-03

TEST RESULTS

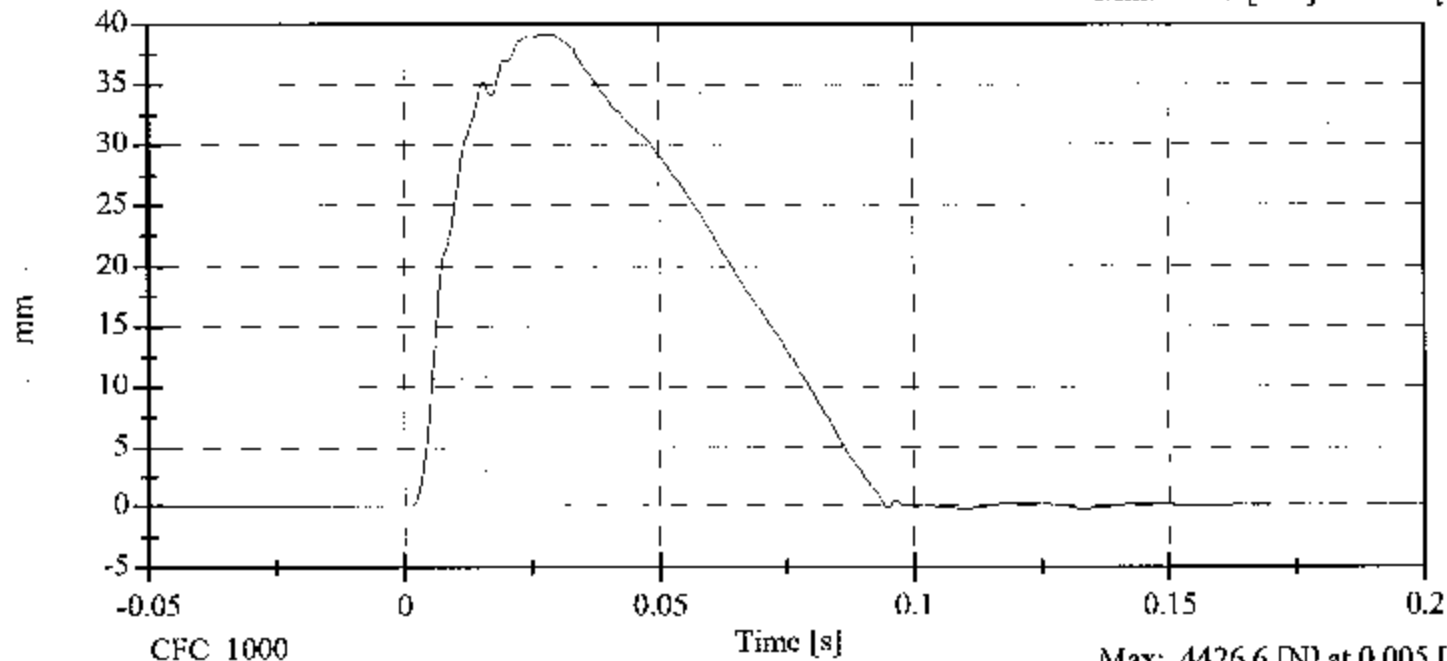
TEST CONDITION	PARAMETERS	RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Displacement:	33.00-40.00 mm	39.14 mm	Passed
Maximum Force:	3741.00-4448.00 N	4426.58 N	Passed

016 Shock High

Displacement vs. Time

Max: 39.1 [mm] at 0.027 [s]

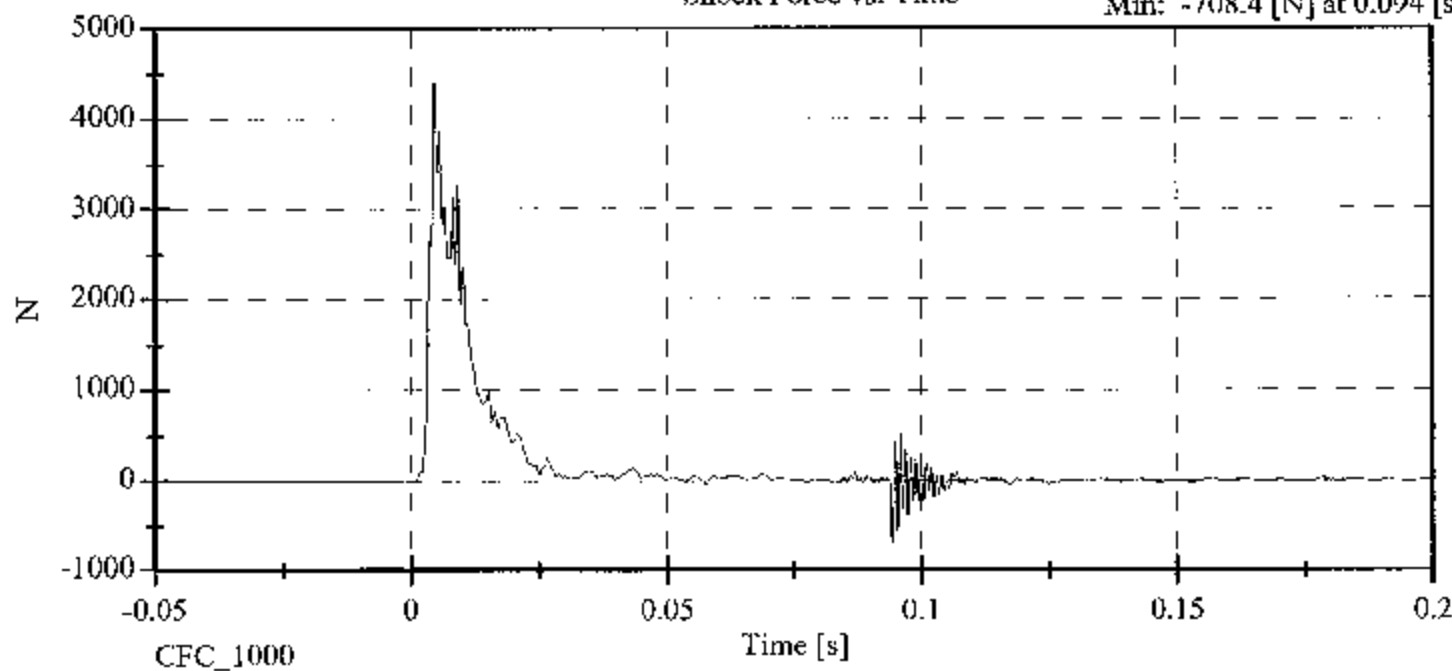
Min: -0.3 [mm] at 0.110 [s]



Max: 4426.6 [N] at 0.005 [s]

Shock Force vs. Time

Min: -708.4 [N] at 0.094 [s]



**LATERAL THORAX IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

2

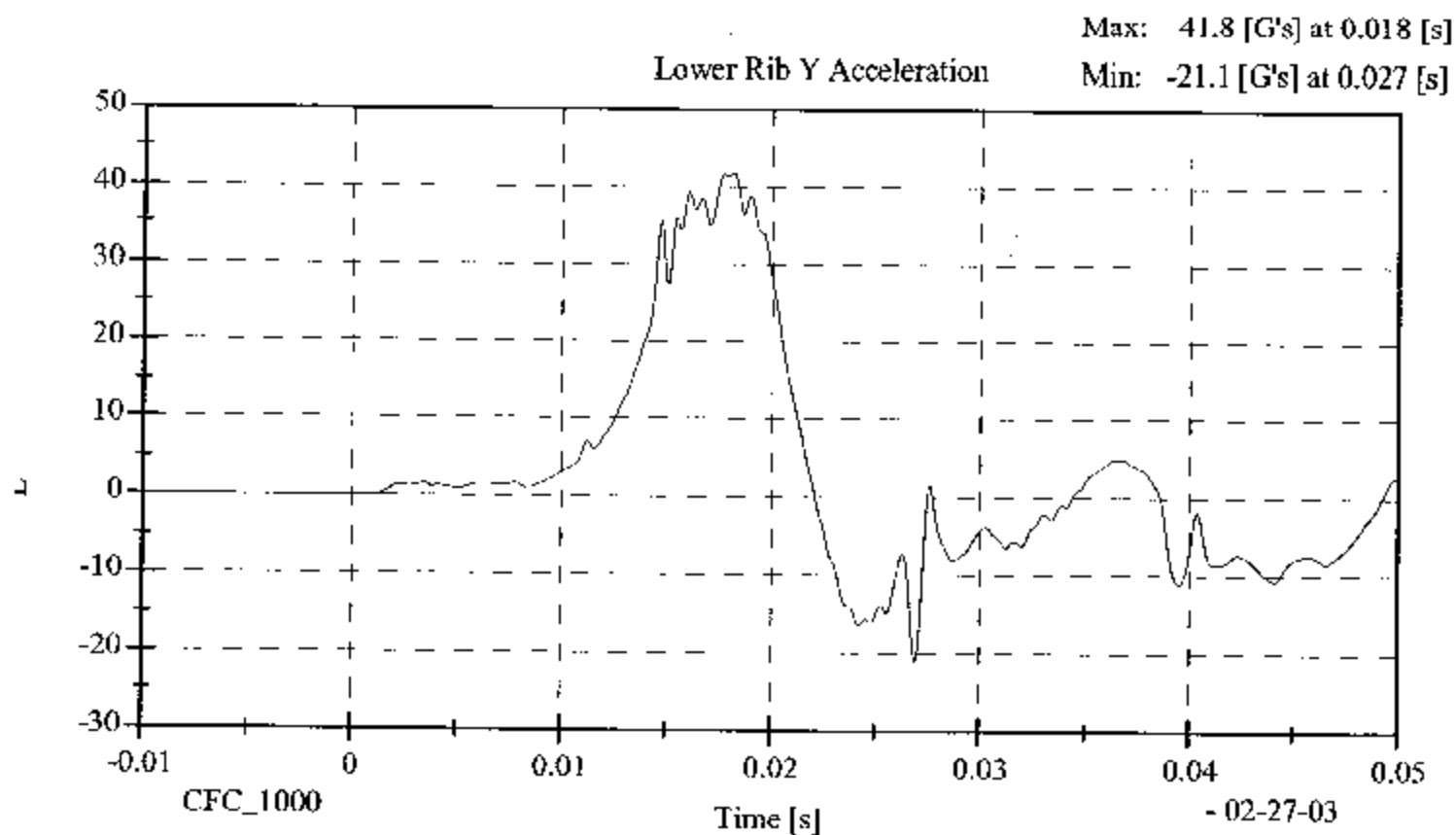
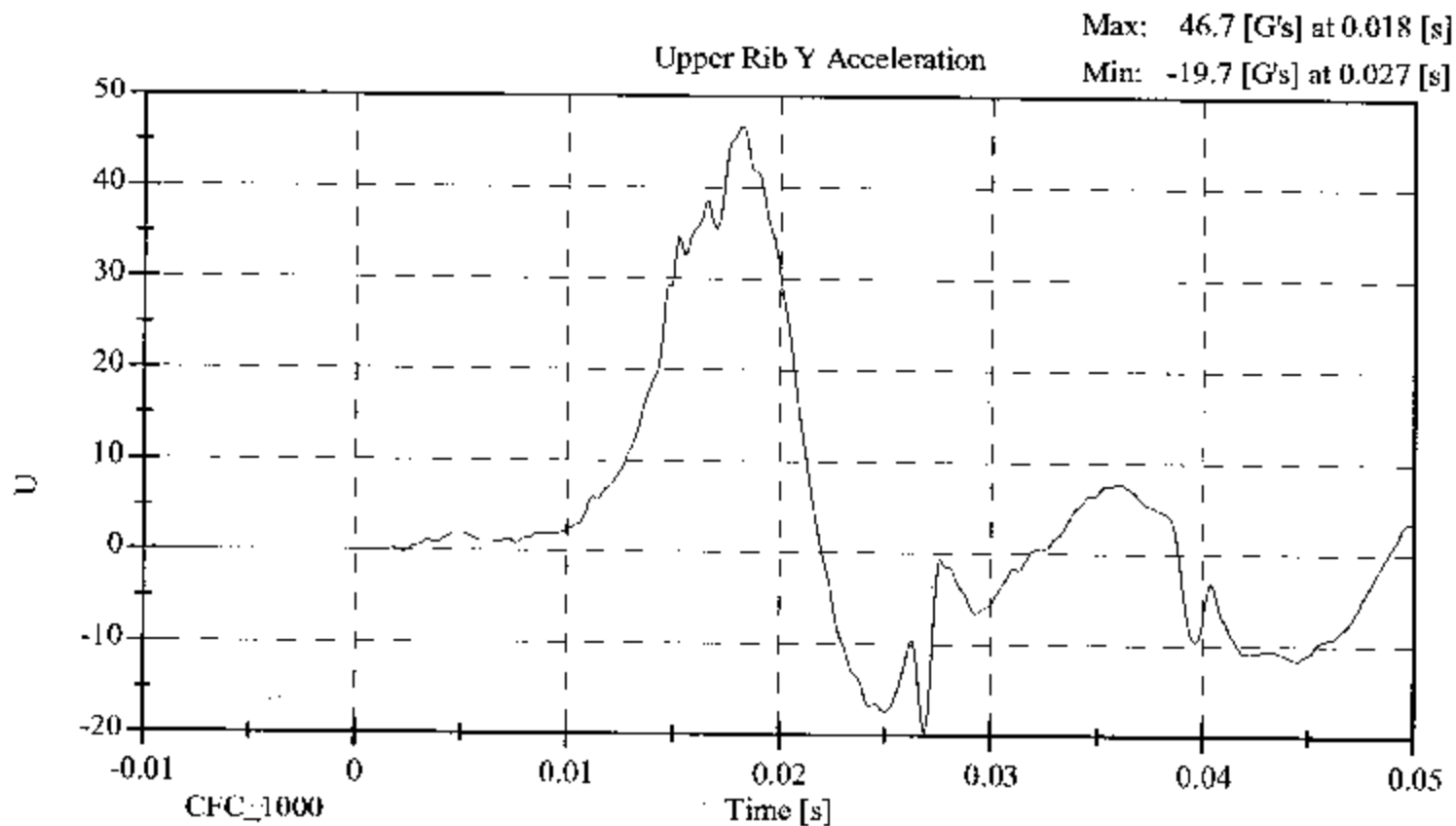
Date: February 27, 2003

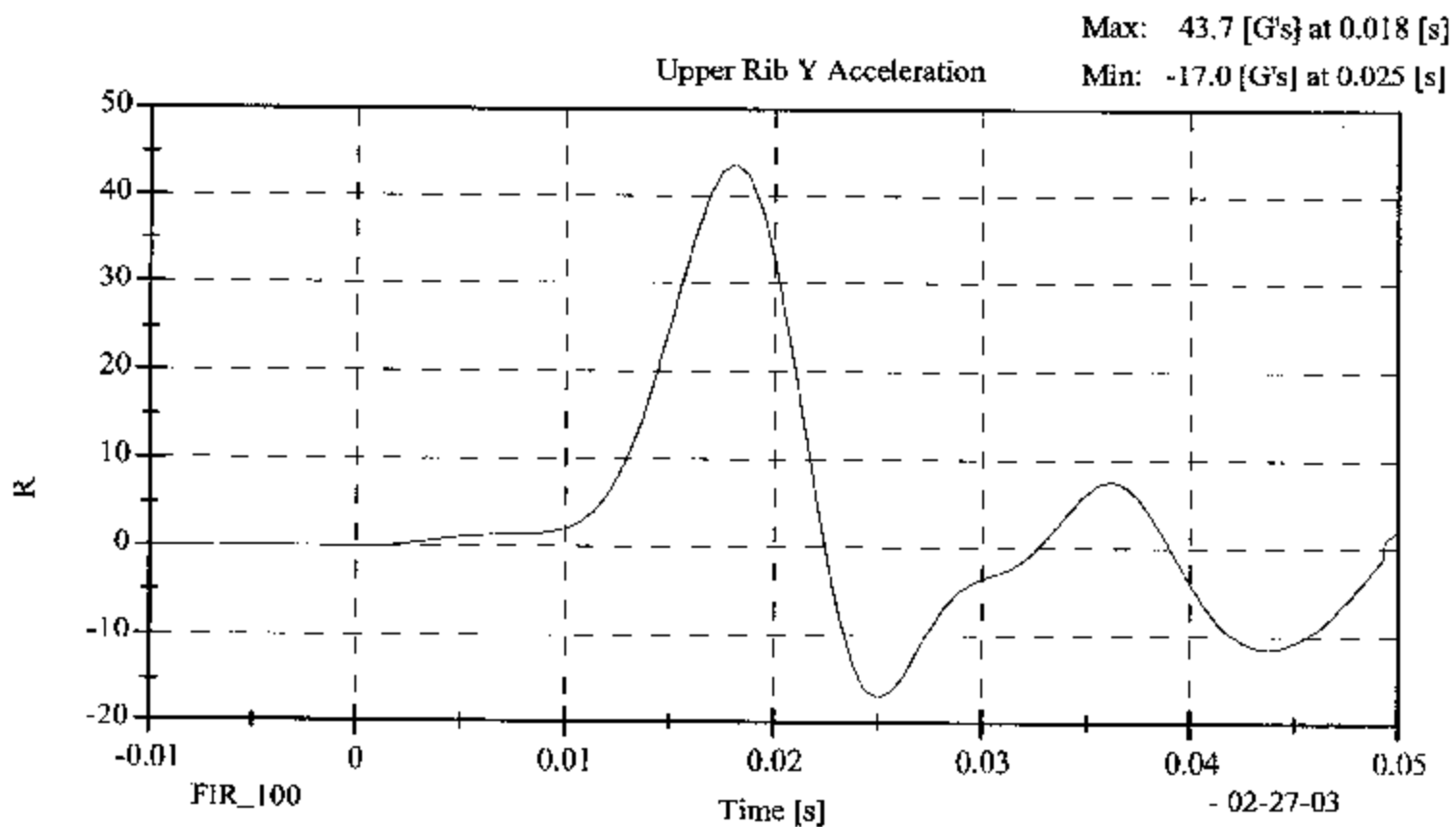
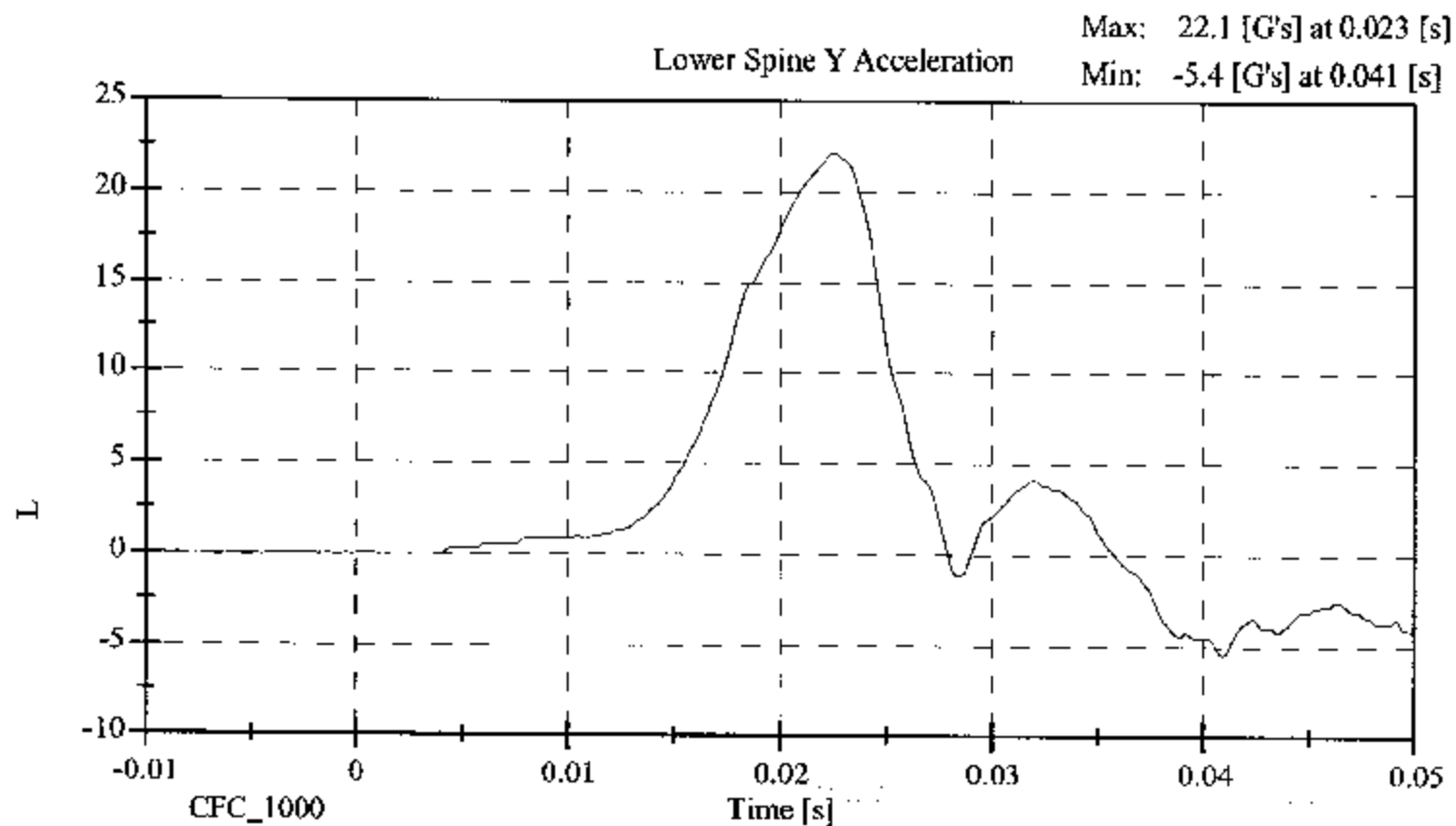
Laboratory Technician:

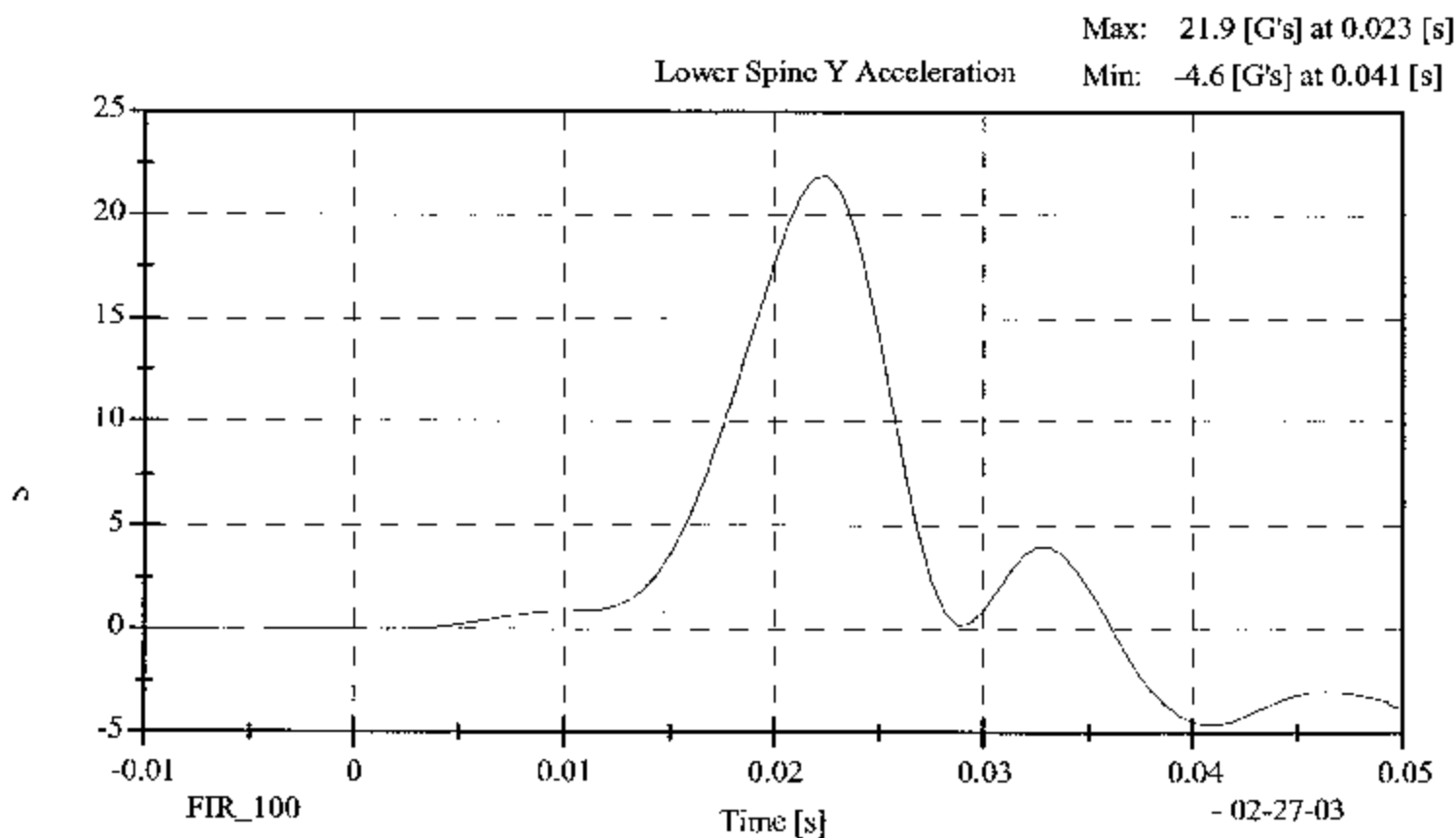
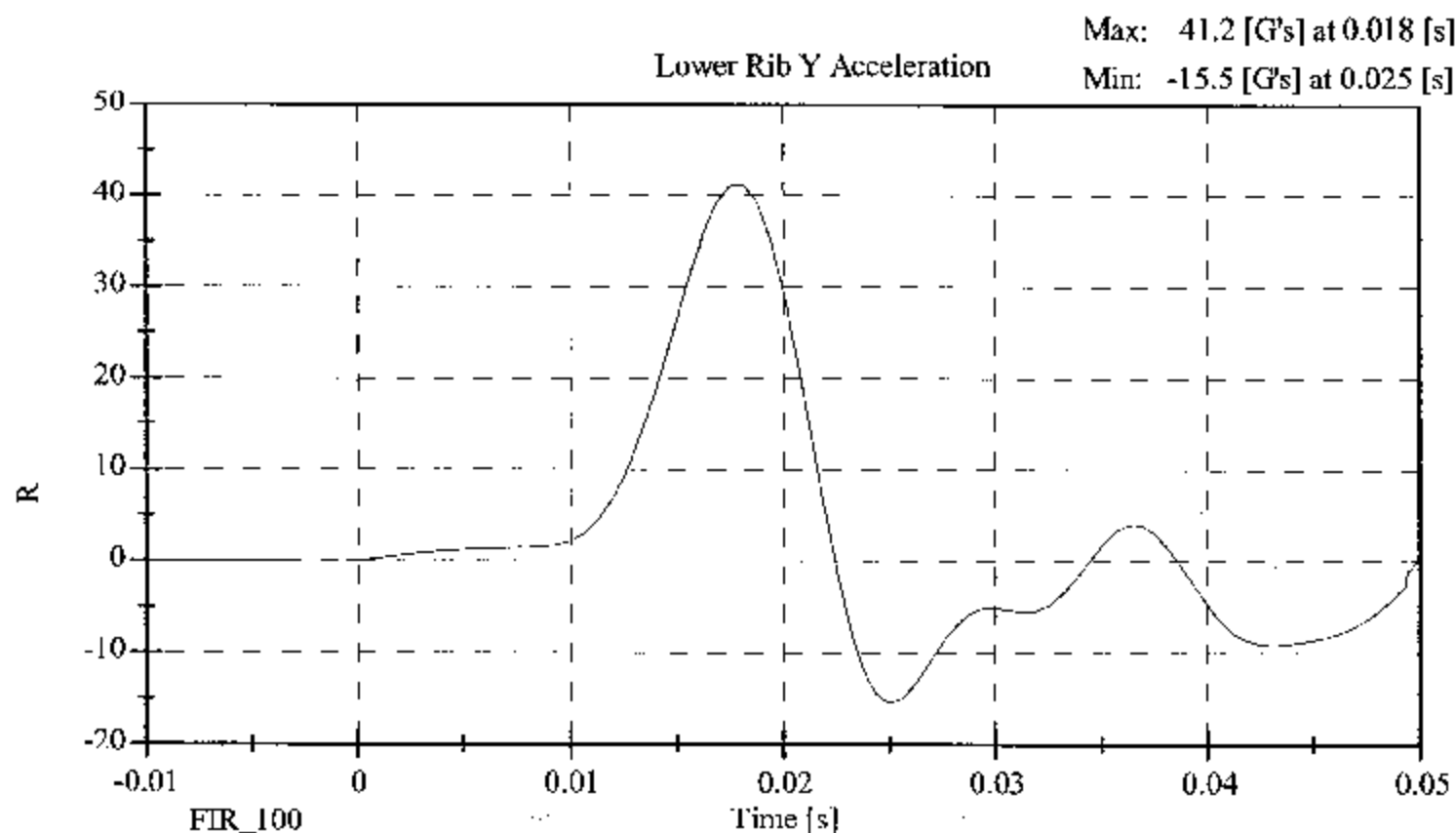
B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	33
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	43.75
LOWER RIB (g's)	37 - 46	41.17
LOWER SPINE (g's)	15 - 22	21.87

REMARKS: None







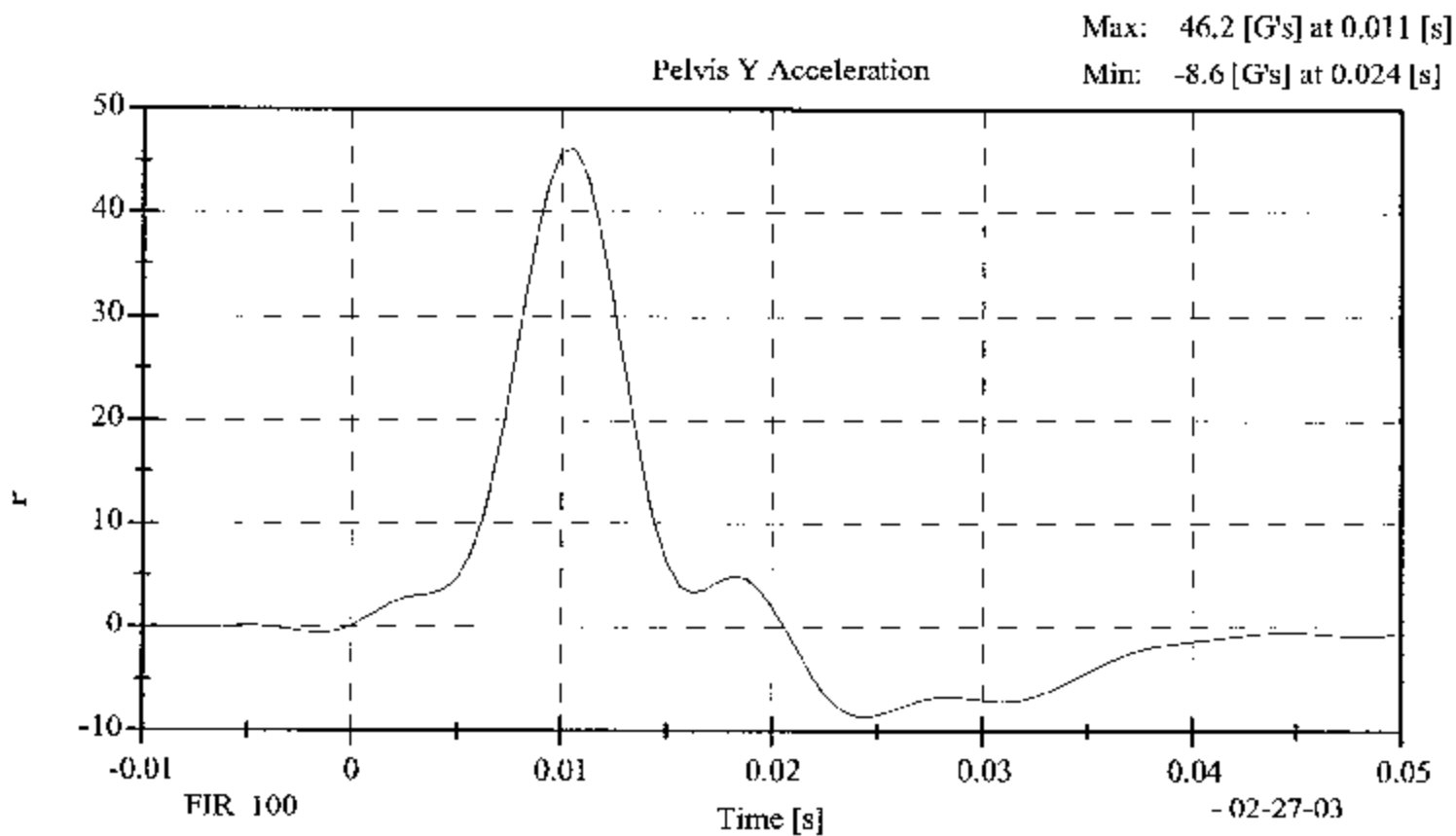
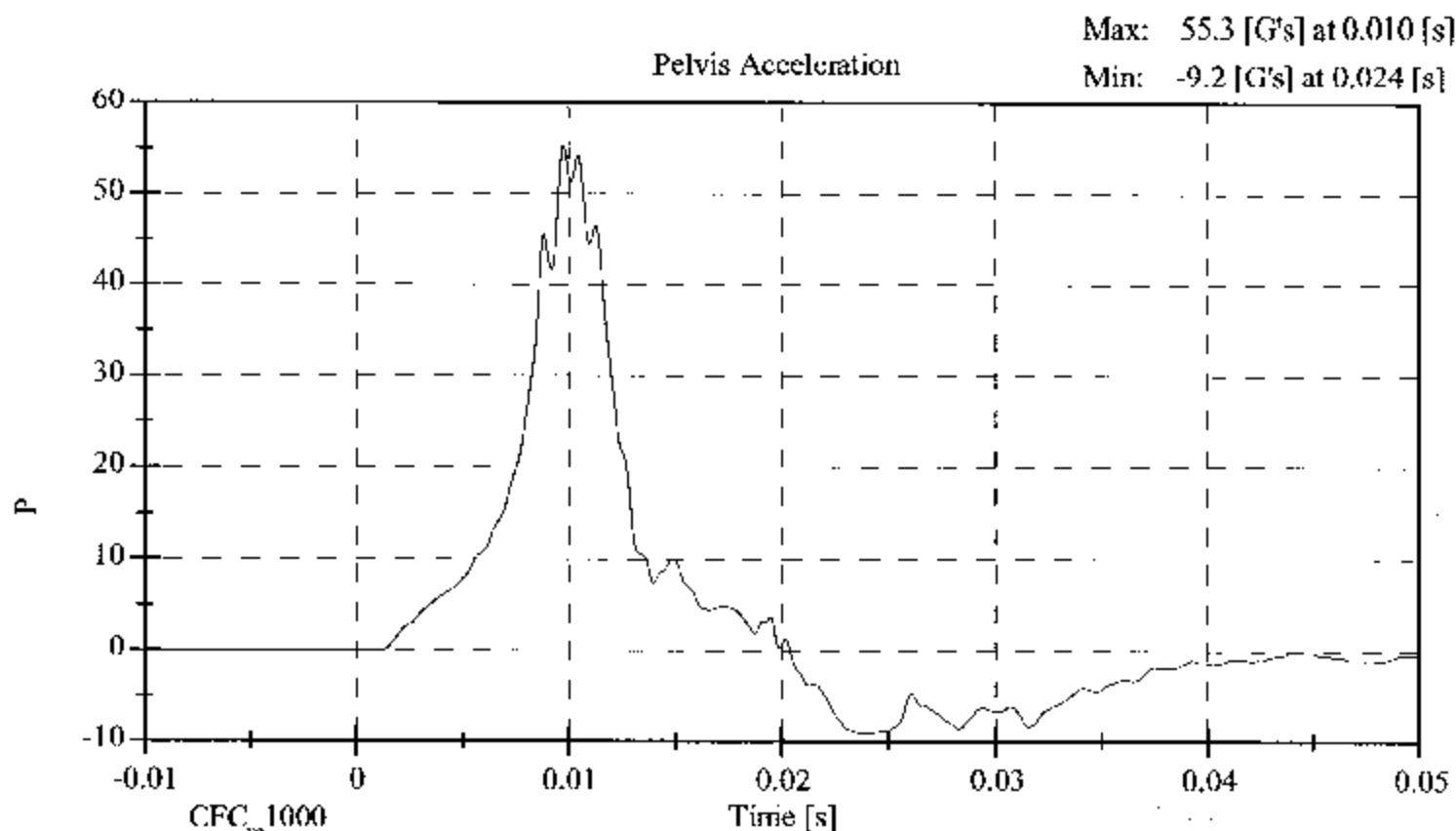
**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 2
Date: February 27, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	33
PROBE SPEED (m/s)	4.27 - 4.33	4.31
PELVIS ACCELERATION (g's)	40 - 60	46.16

REMARKS: None



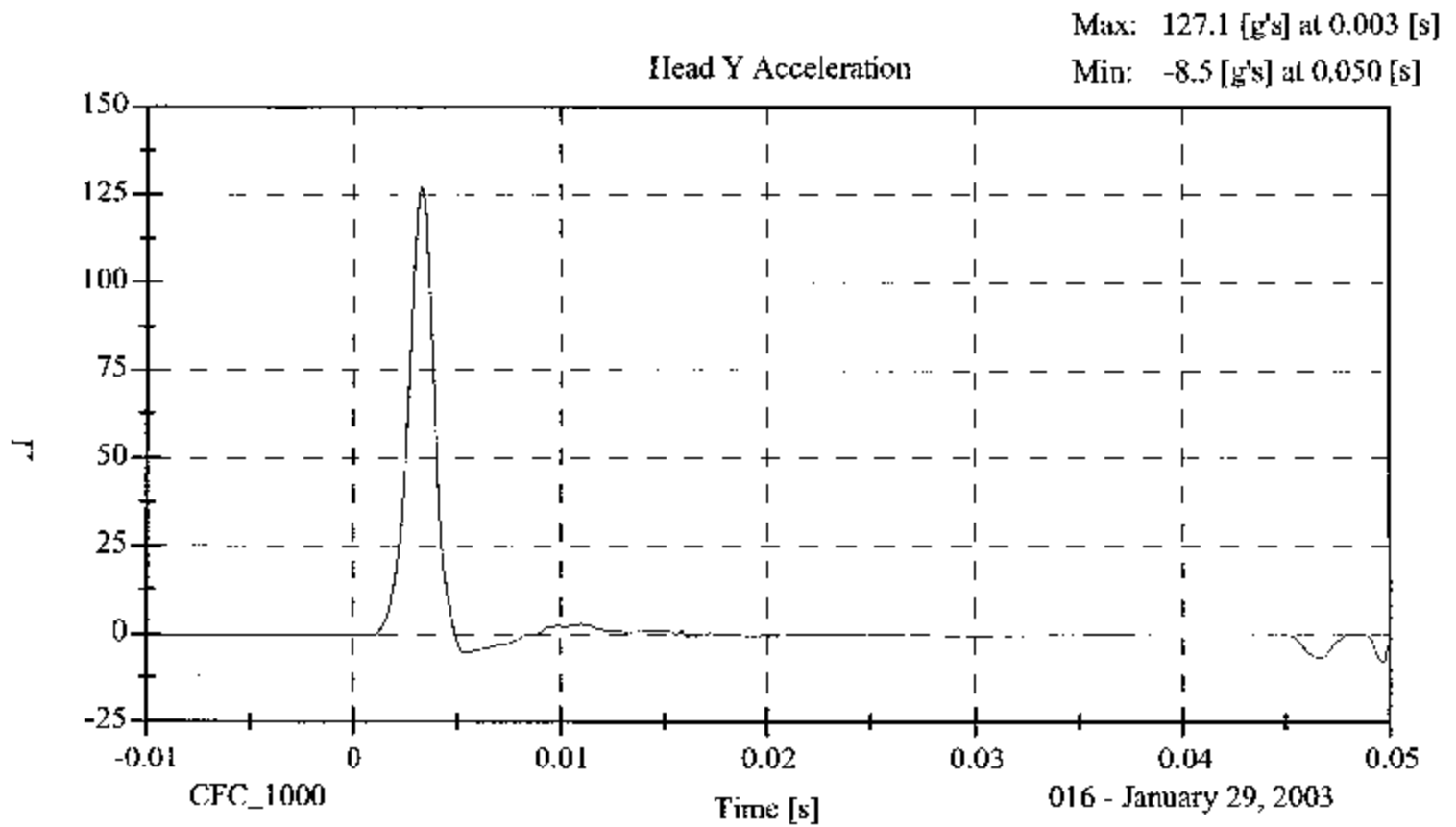
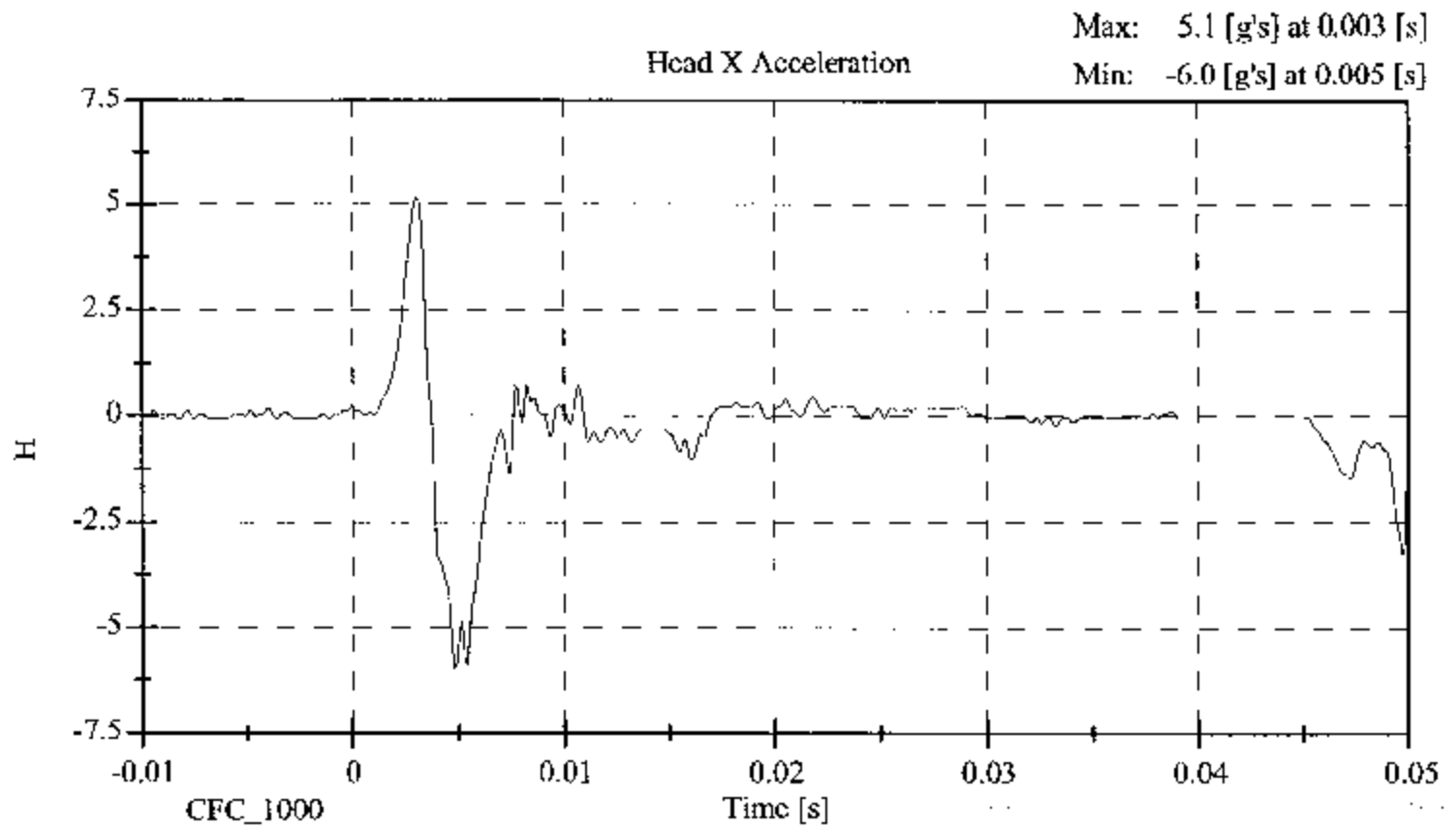
HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

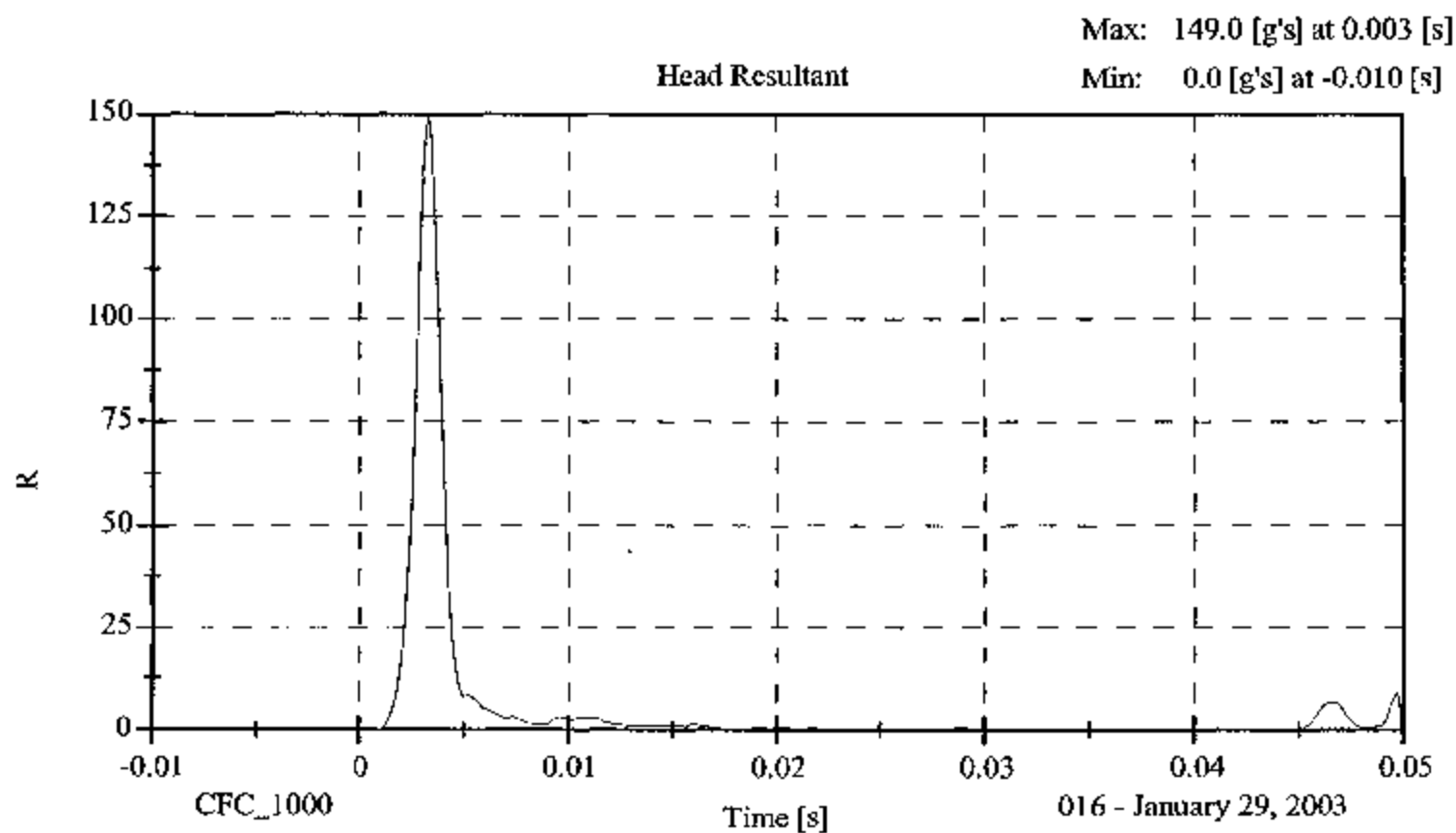
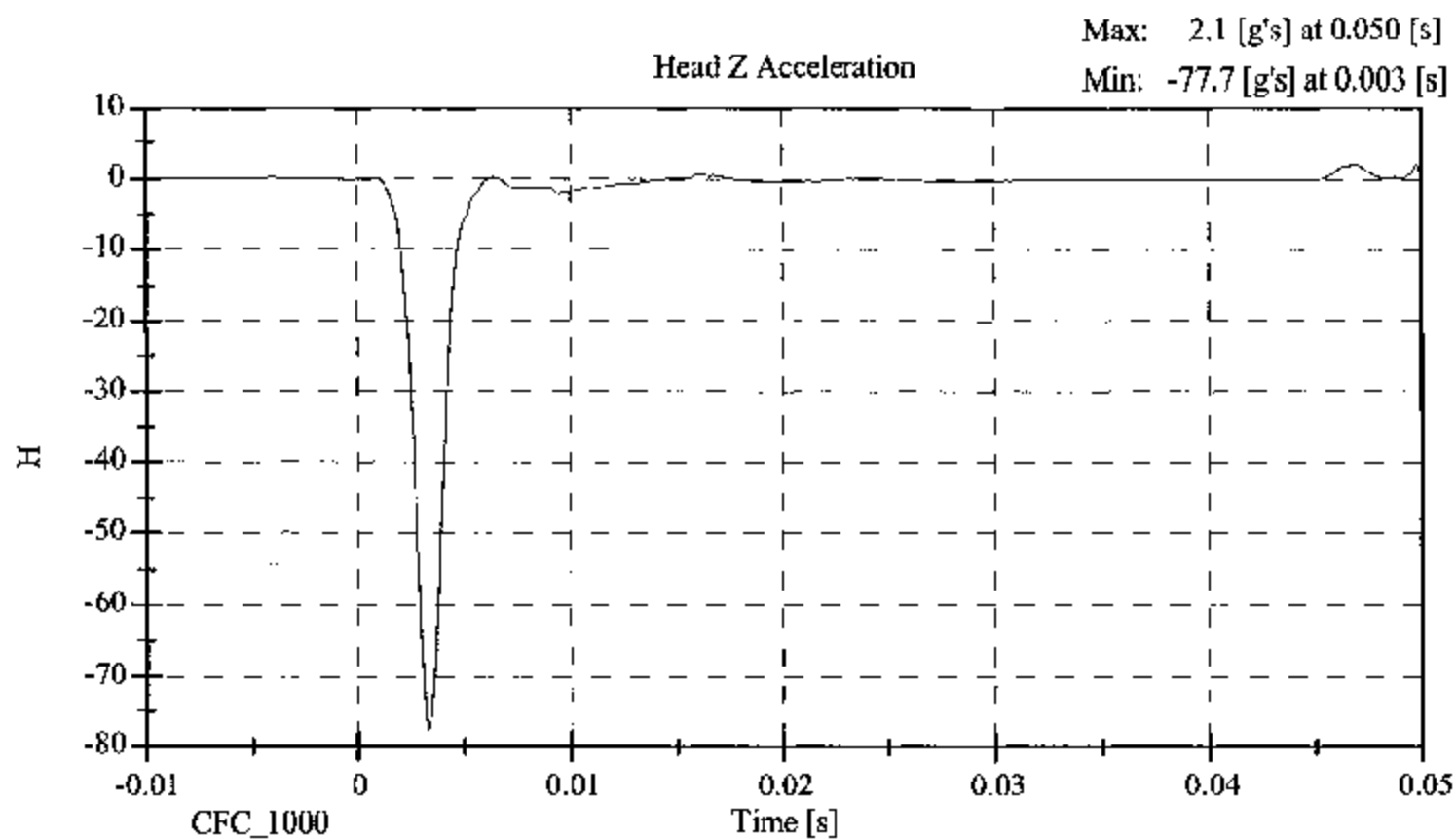
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 2
Date: January 29, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	20.6 – 22.2	21.1
RELATIVE HUMIDITY (%)	10 – 70	34.00
PEAK RESULTANT ACCELERATION (Gs)	120 – 150	149.05
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 15	5.13
CURVE PERCENT NONMODAL (%)	< 15	6.23

REMARKS: None





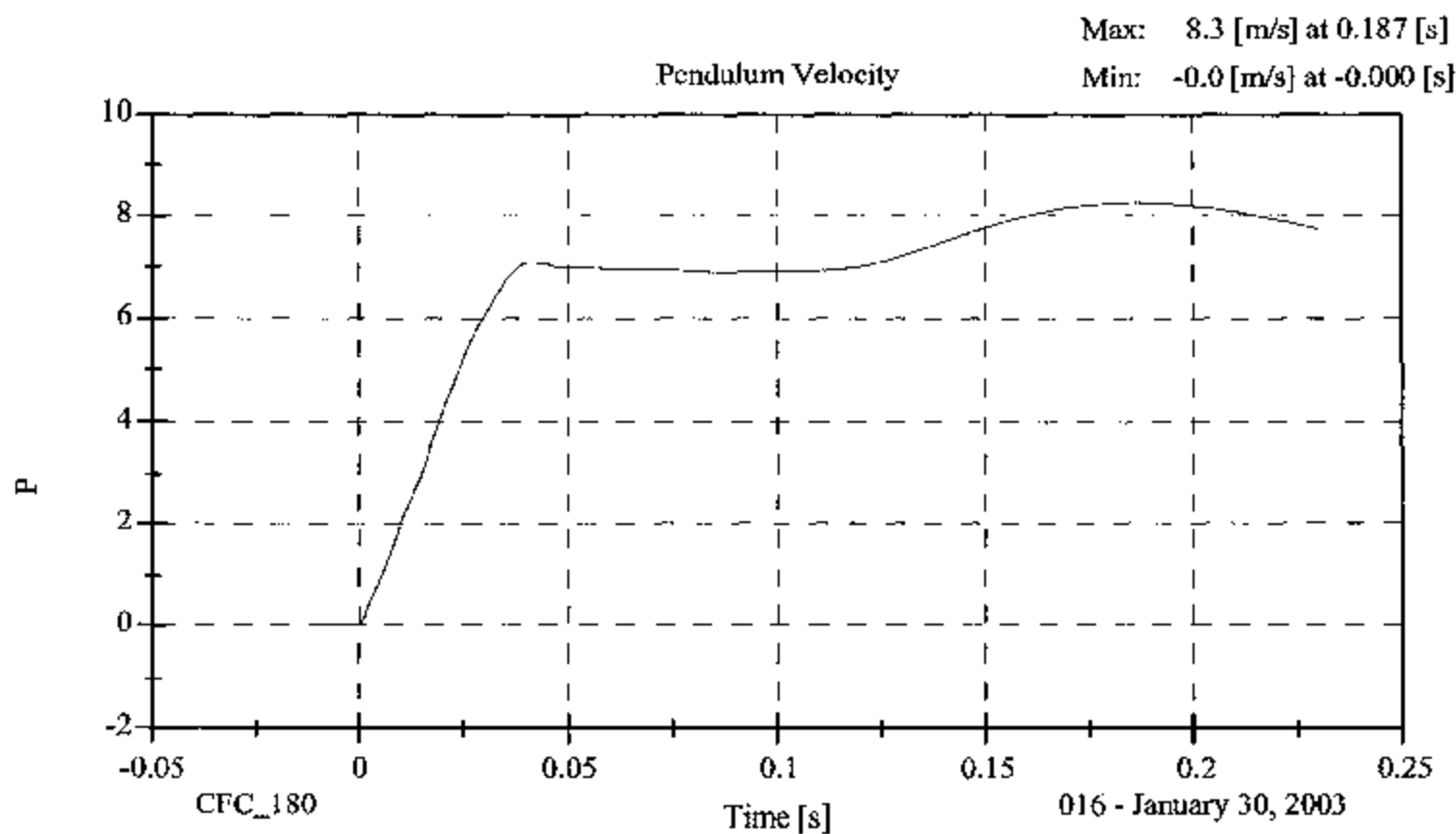
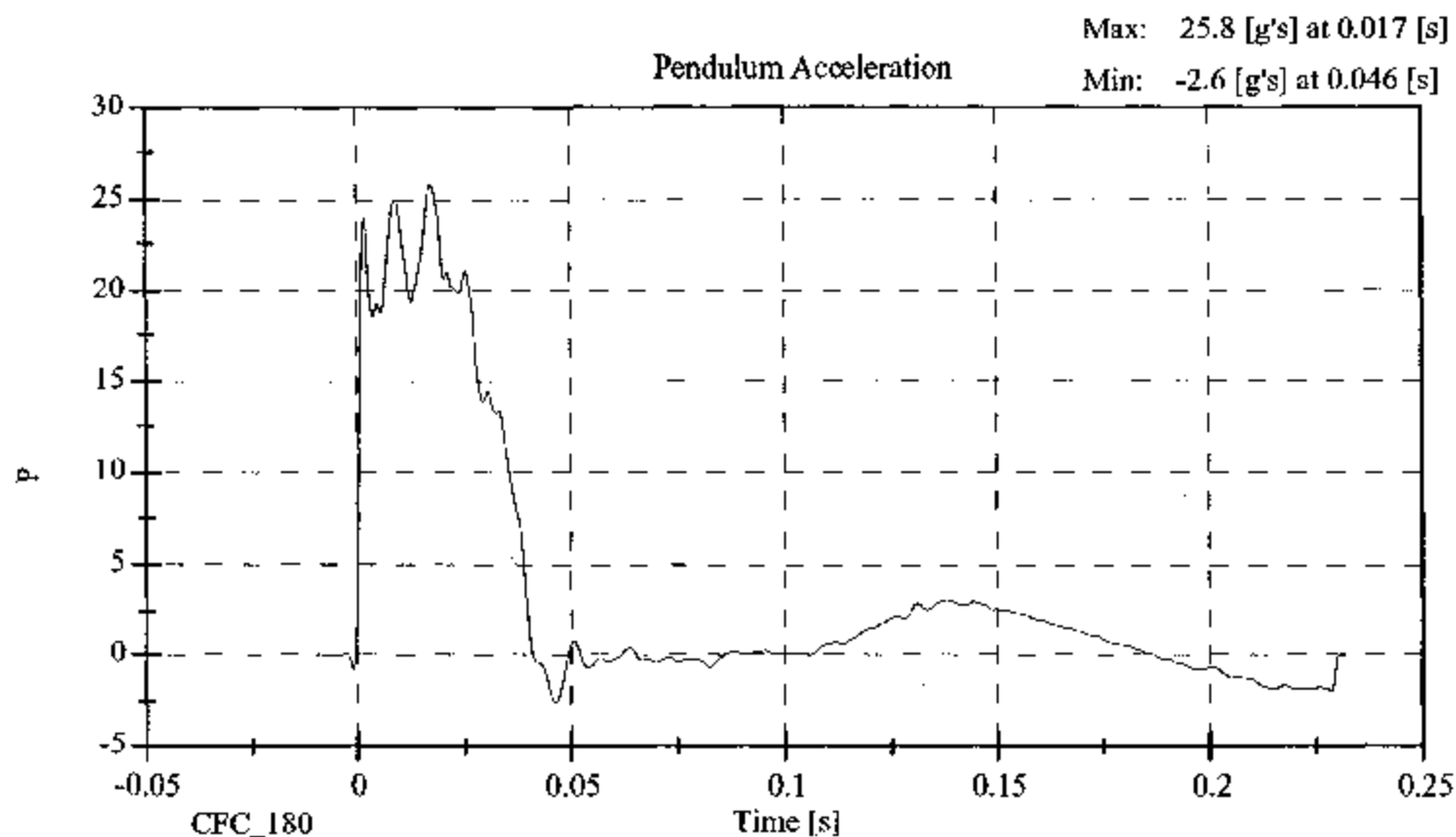
LATERAL NECK BENDING TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

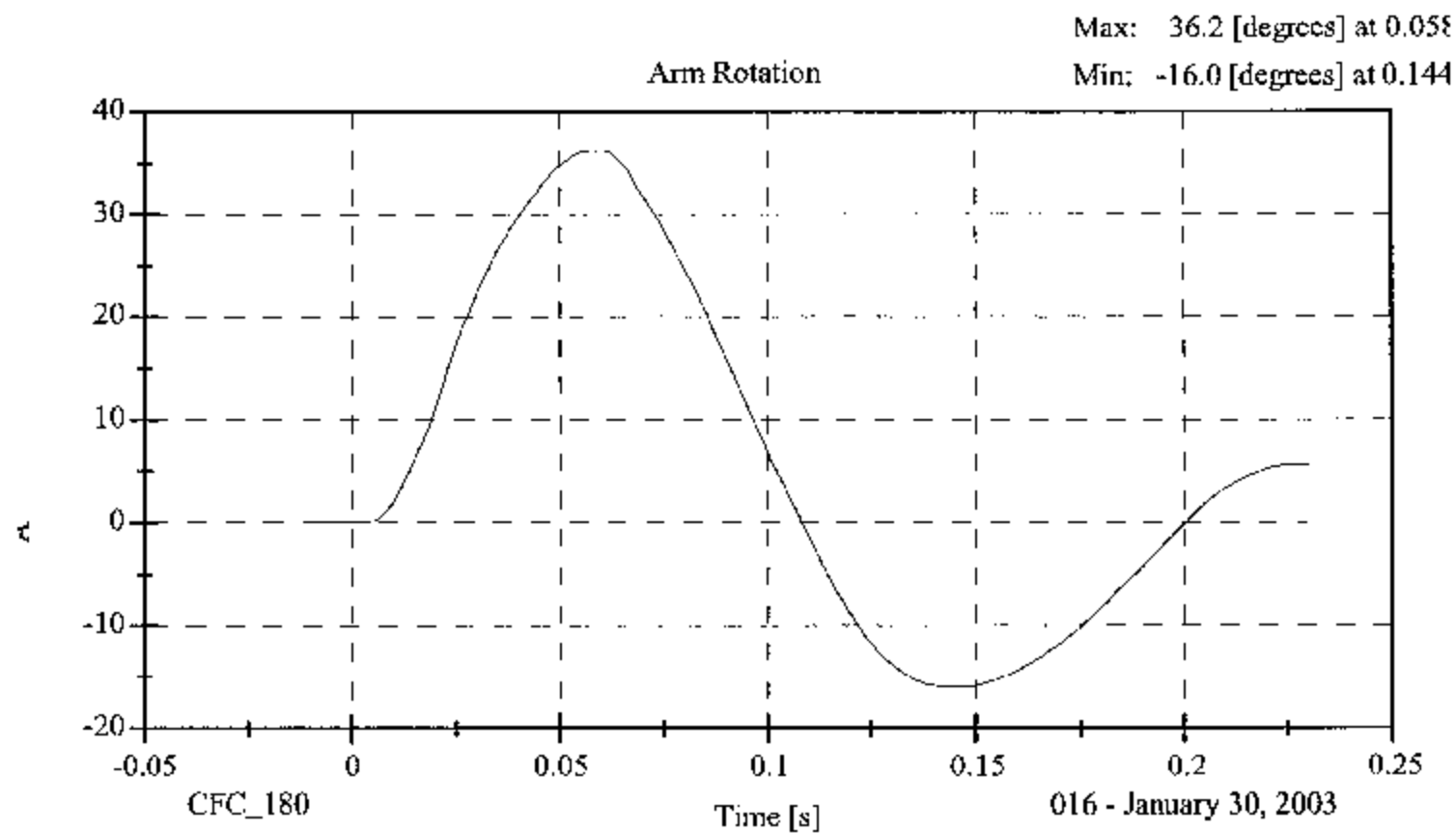
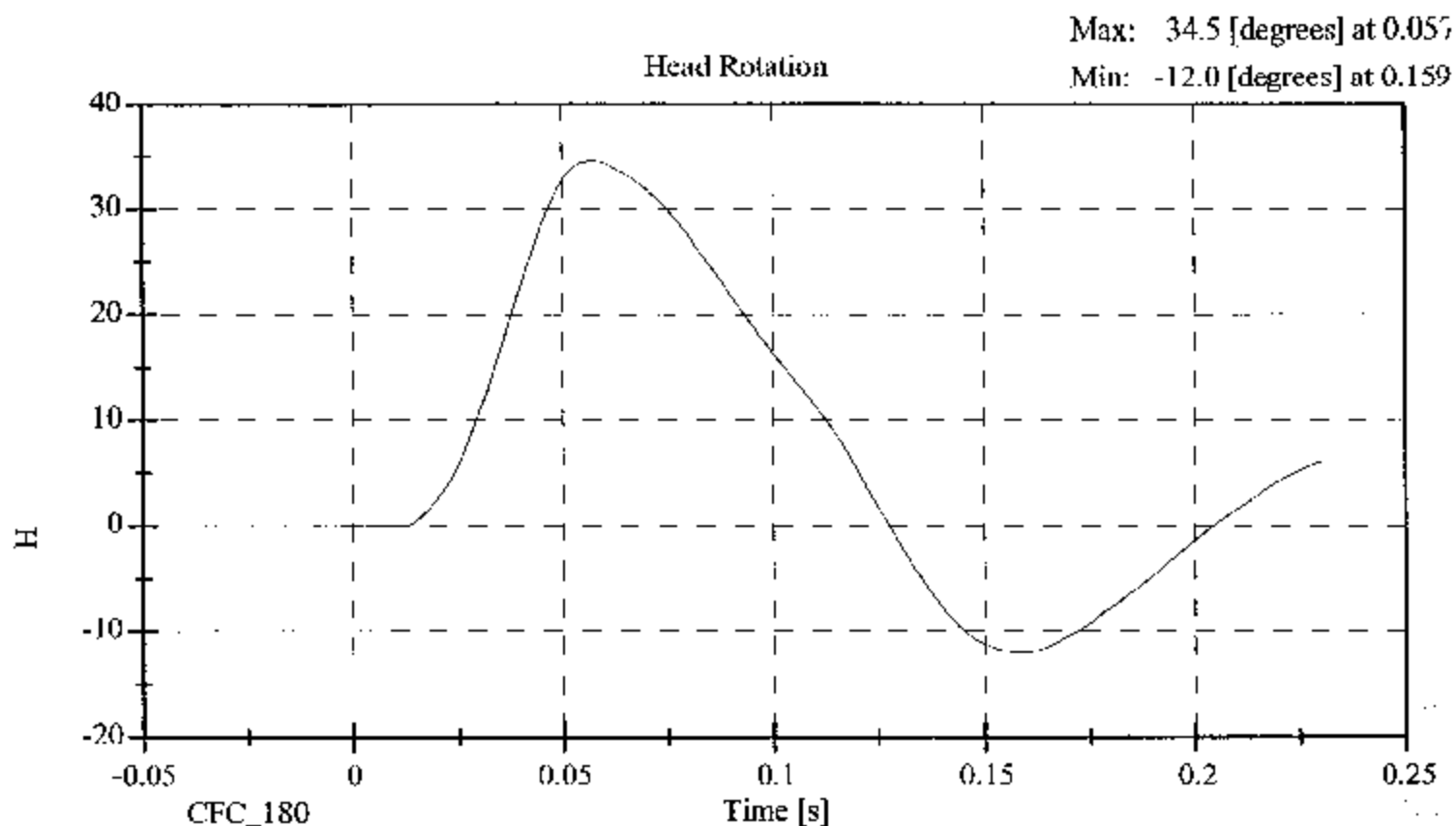
SID Serial No.: 016 Sequential Test Number: 2
Date: January 30, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	20.6 - 22.2	21.1
RELATIVE HUMIDITY (%)	10 - 70	38.0
IMPACT VELOCITY (m/s)	6.89 - 7.13	7.09
PENDULUM DELTA V		
DELTA V @ 10 ms (m/s)	1.96 - 2.55	2.00
DELTA V @ 20 ms (m/s)	4.12 - 5.10	4.21
DELTA V @ 30 ms (m/s)	5.73 - 7.01	6.06
DELTA V @ 40-70 ms (m/s)	6.27 - 7.64	7.07
D PLANE ROTATION		
MAXIMUM ROTATION (deg)	64 - 78	70.73
ROT. ANGLE TIME to ZERO (ms)	50 - 70	59.60
MOMENT ABOUT THE OCCIPITAL CONDYLE		
MAX OCCIPITAL MOMENT (Nm)	88 - 108	90.46
OCCIPITAL MOMENT DECAY (ms)	40.0 - 60.0	46.80
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT		
ROTATION wrt MOMENT (ms)	0 - 20	5.90

REMARKS: None

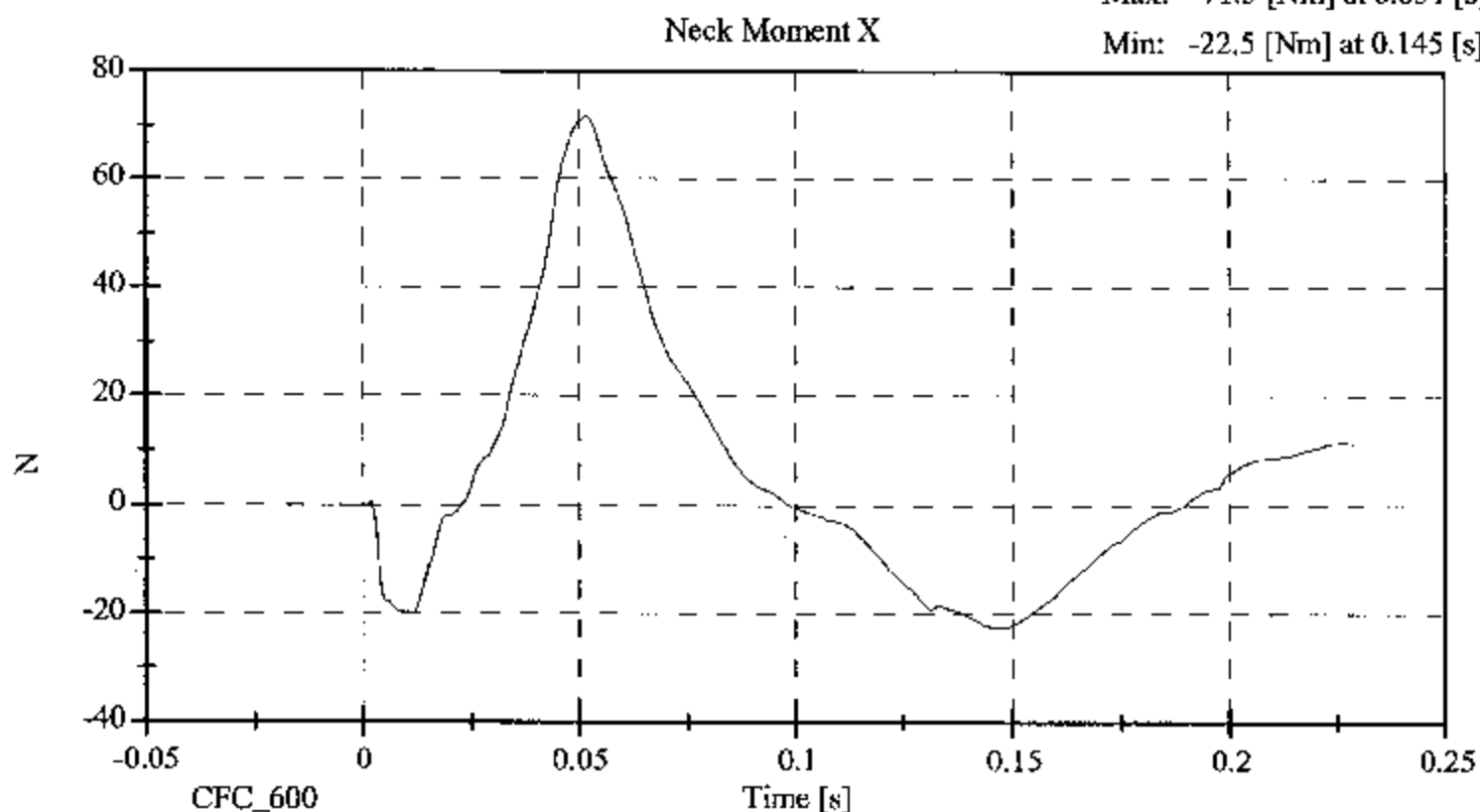


016 - January 30, 2003



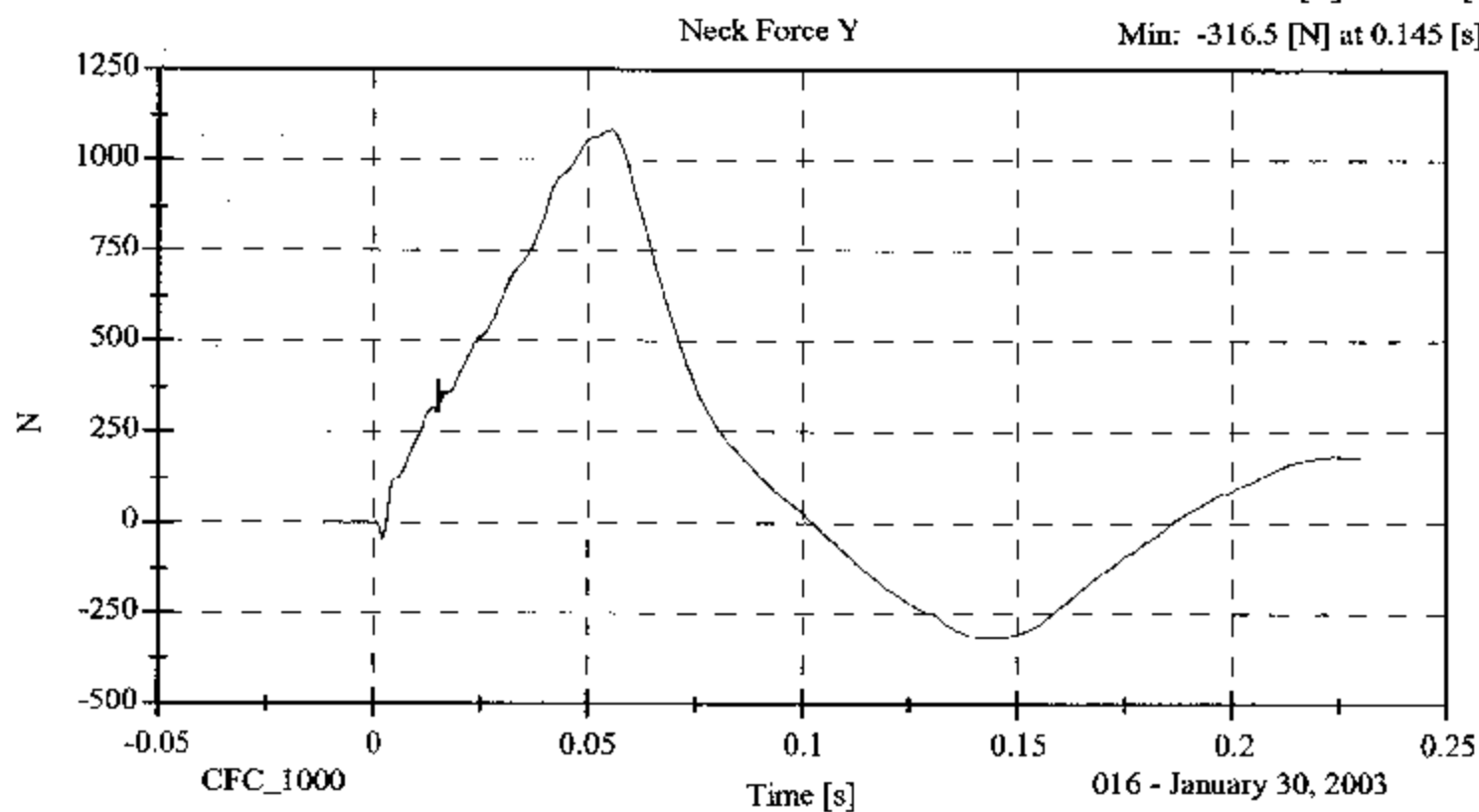
Max: 71.5 [Nm] at 0.051 [s]

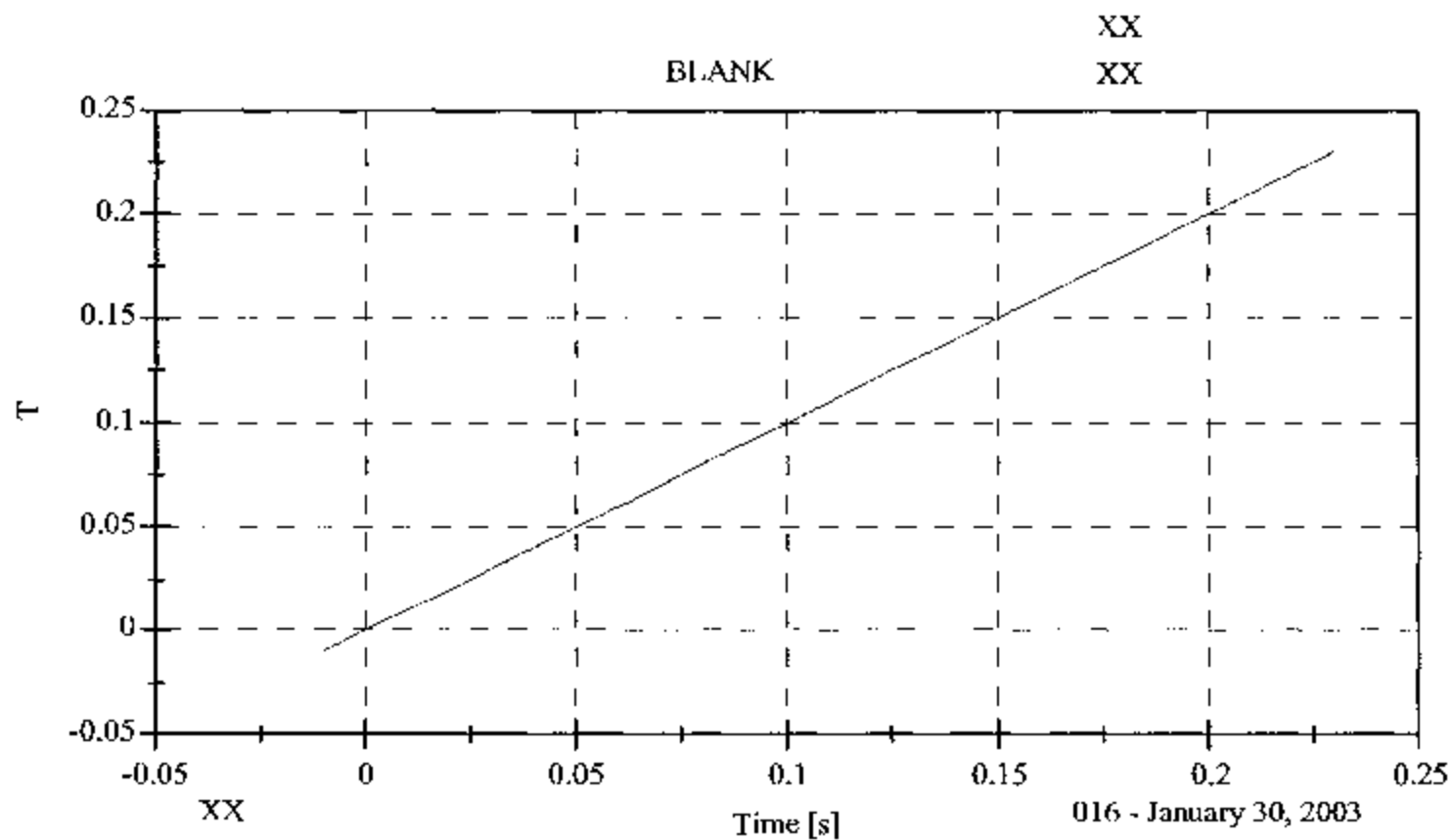
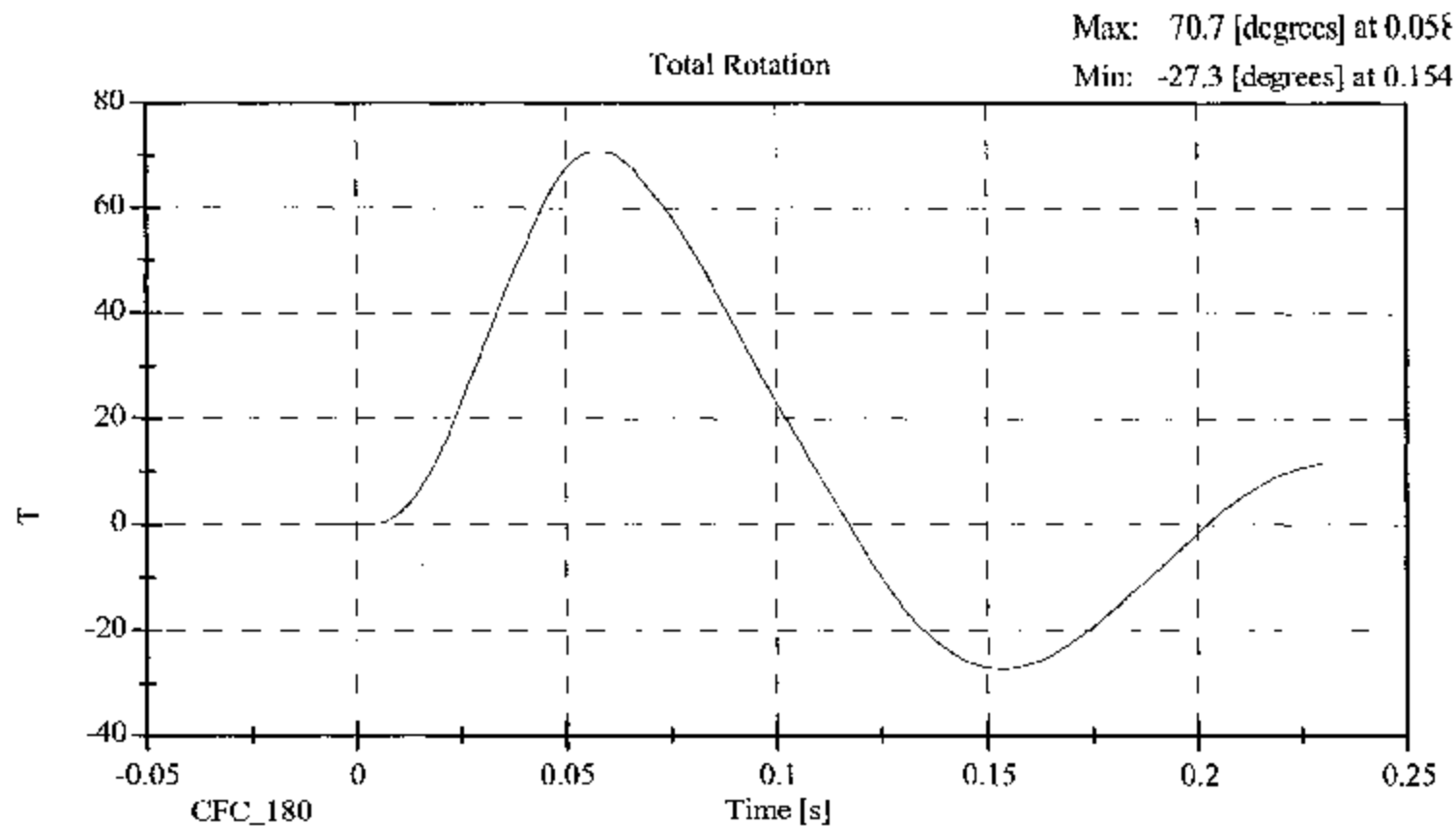
Min: -22.5 [Nm] at 0.145 [s]



Max: 1082.9 [N] at 0.056 [s]

Min: -316.5 [N] at 0.145 [s]





ABDOMINAL COMPRESSION TEST**PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

2

Date: February 28, 2003

Laboratory Technician:

B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 13 mm (N)	104 - 162	112.1
FORCE @ 19 mm (N)	163 - 221	178.4
FORCE @ 25 mm (N)	222 - 280	252.7
FORCE @ 33 mm (N)	325 - 391	367.9

REMARKS: None

Dummy S/N 646

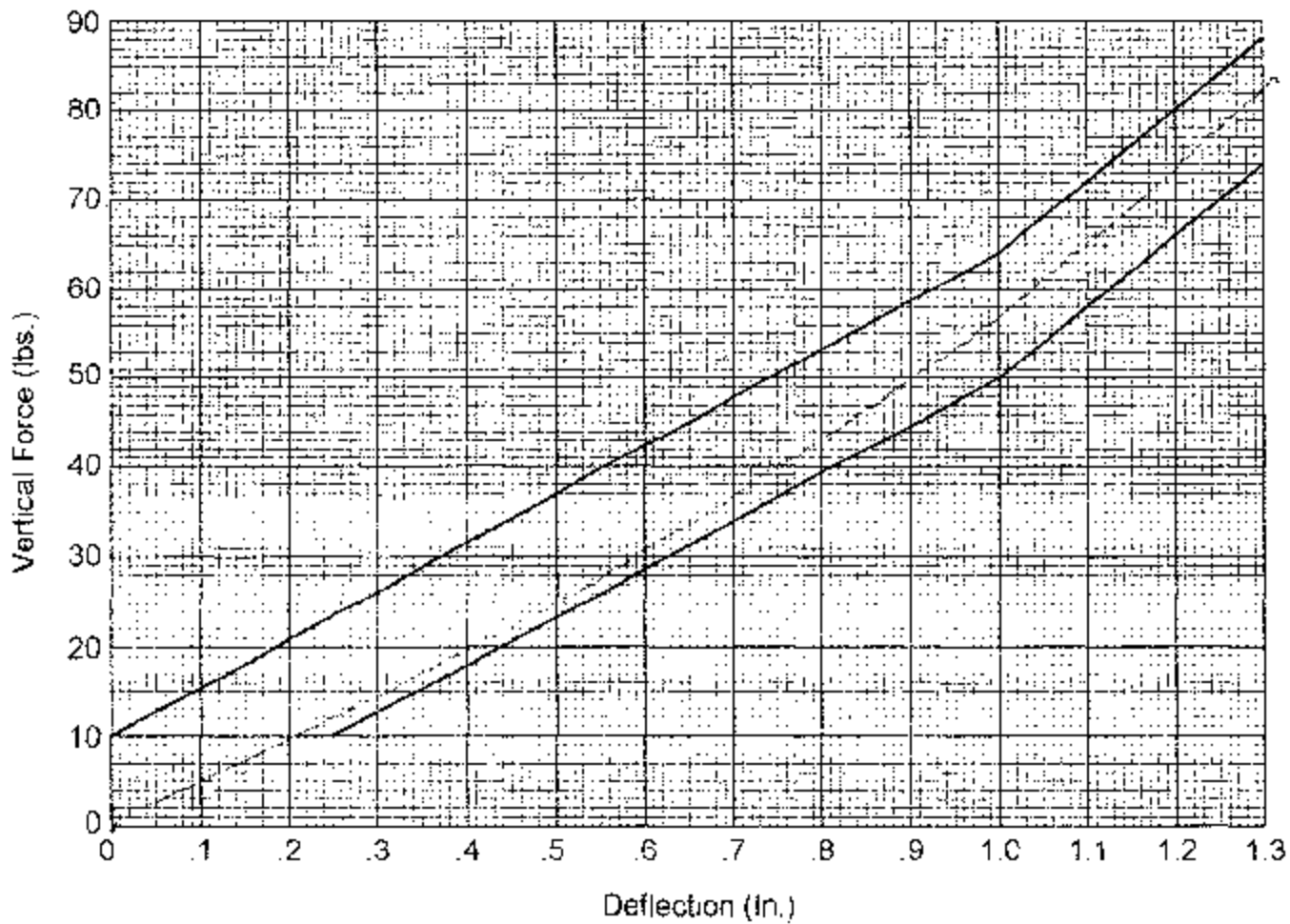
W/A _____

Date 2-28-03

Performed By [Signature]

Temp. 71°

Humidity 31%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

2

Date: February 28, 2003

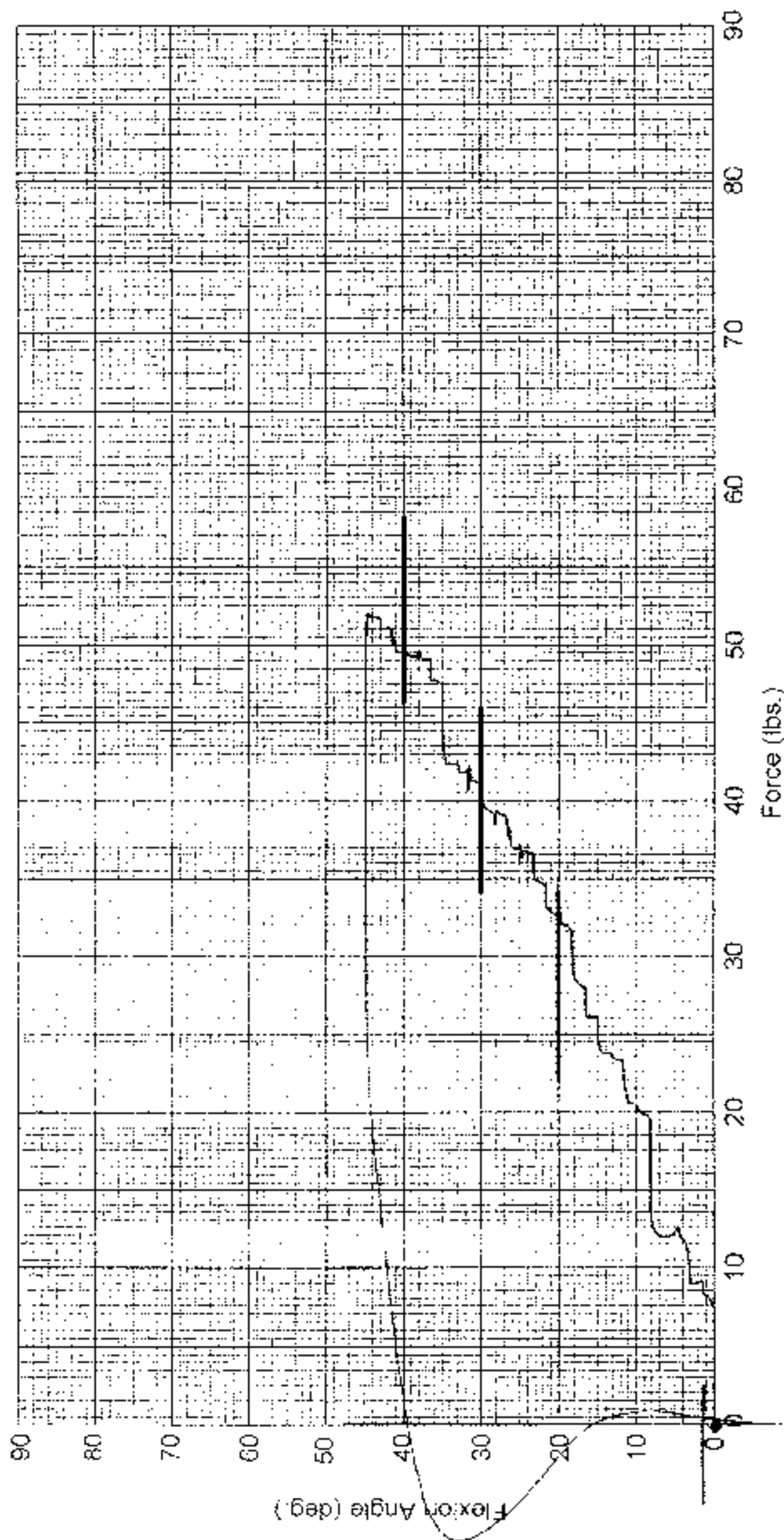
Laboratory Technician:

B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	143.2
FORCE @ 30° (N)	151.2 - 204.6	180.1
FORCE @ 40° (N)	204.6 - 258	220.1
RETURN ANGLE	12° max.	1.3°

REMARKS: None

Dummy S/N 016
 W/A _____
 Date 3-28-03
 Performed By [Signature]
 Temp 71°
 Humidity 31%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

2

Date: February 28, 2003

Laboratory Technician:

B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swicicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	376

REMARKS: None

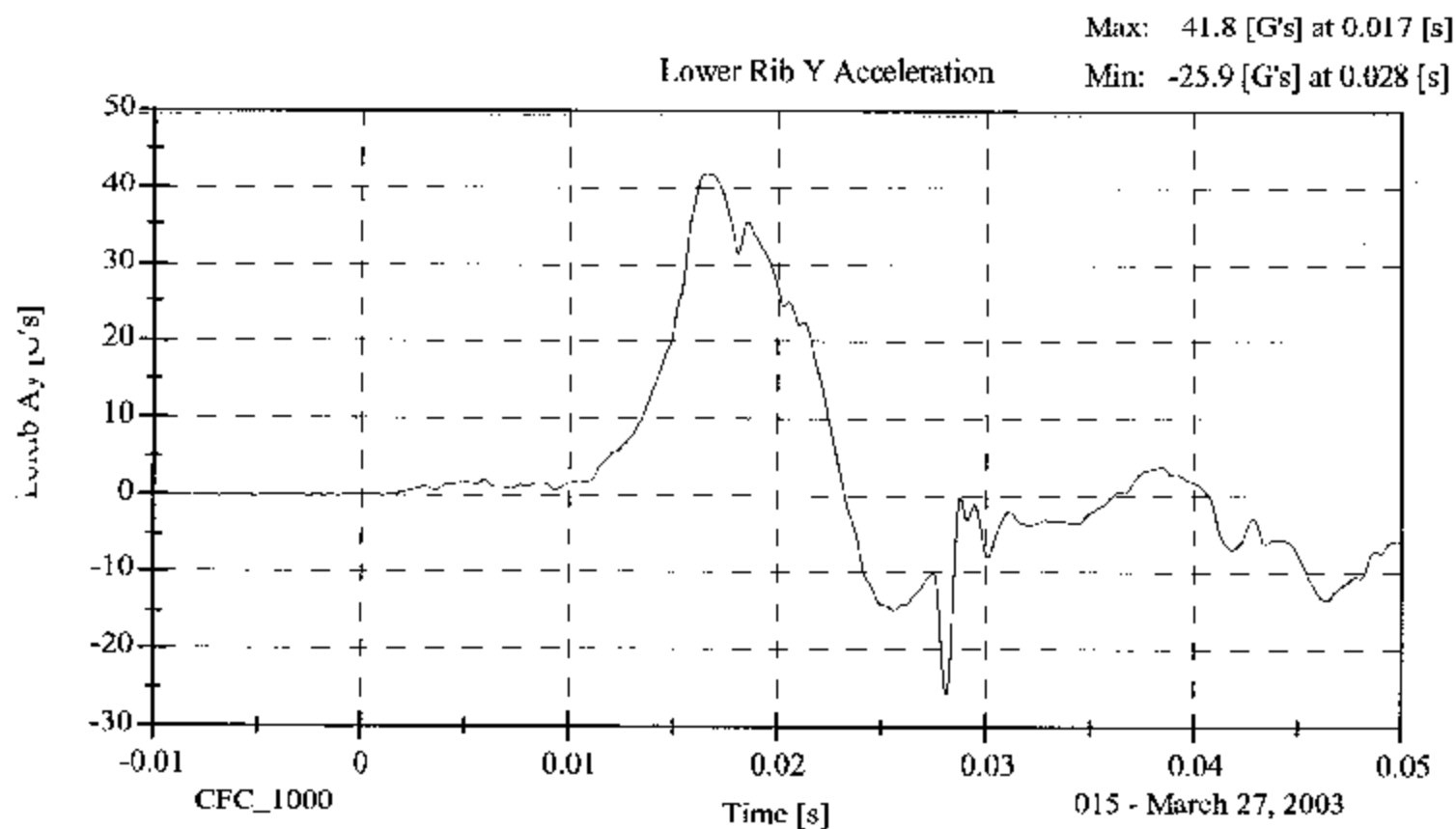
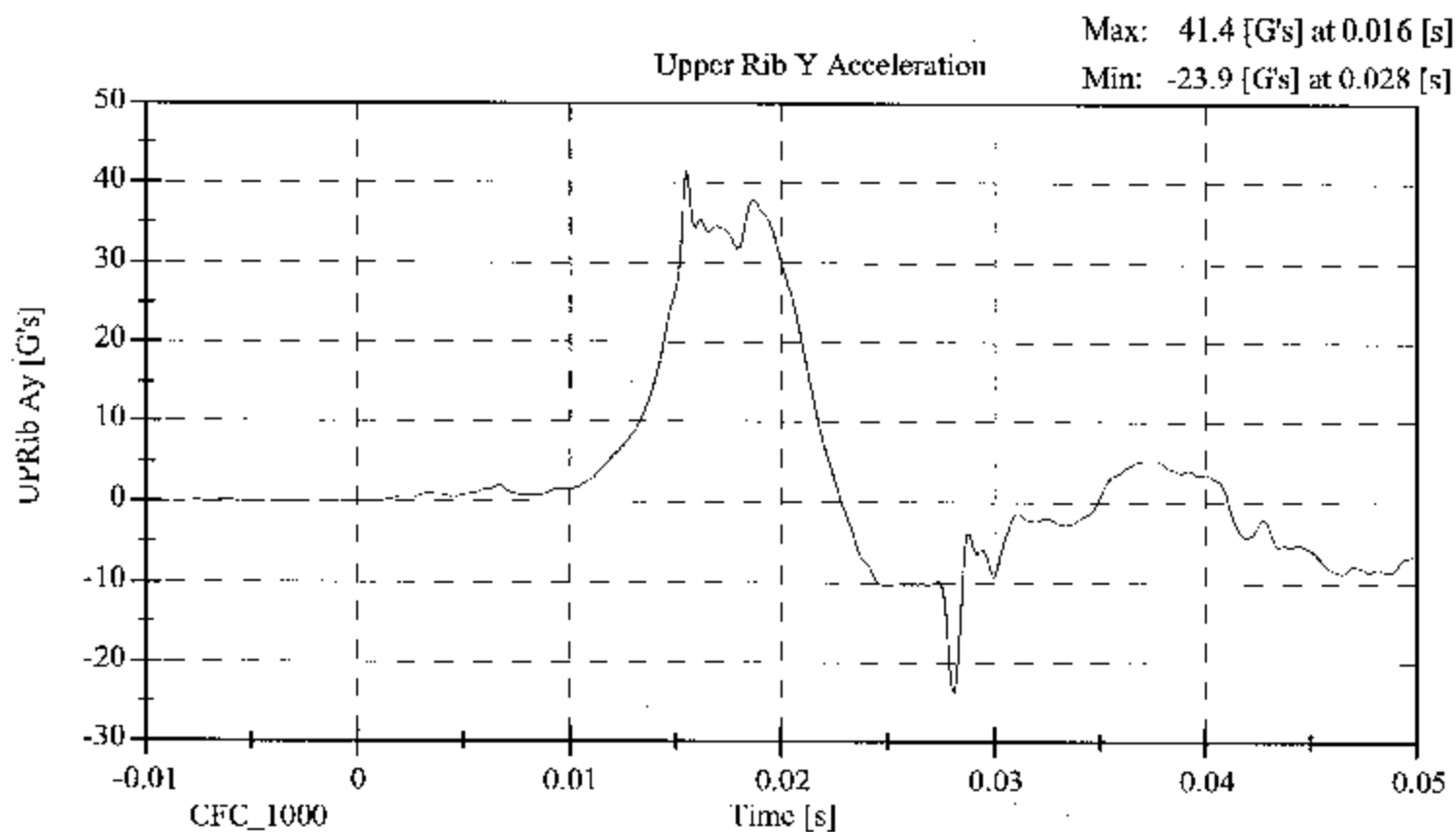
**LATERAL THORAX IMPACT TEST
POST TEST**

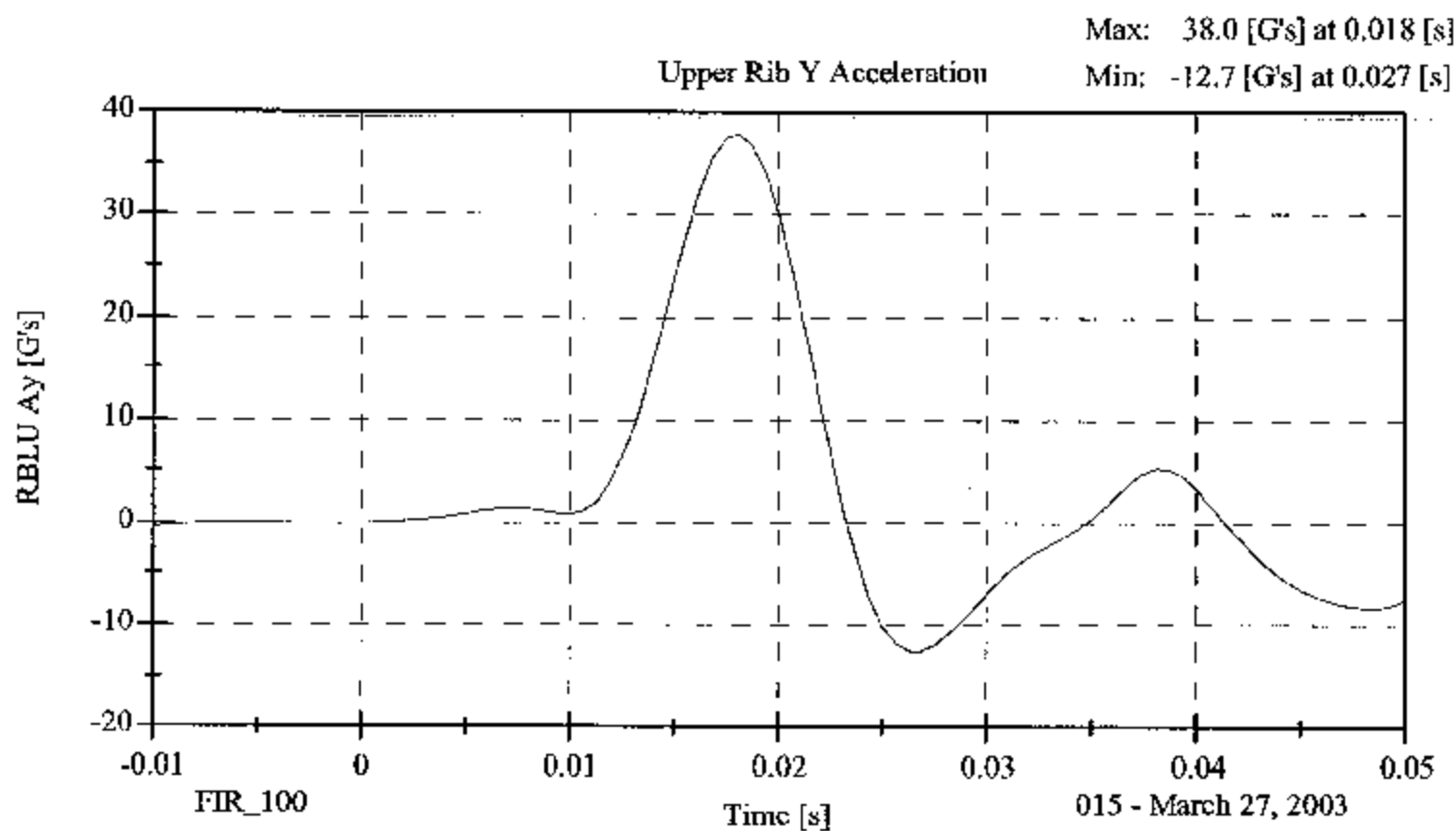
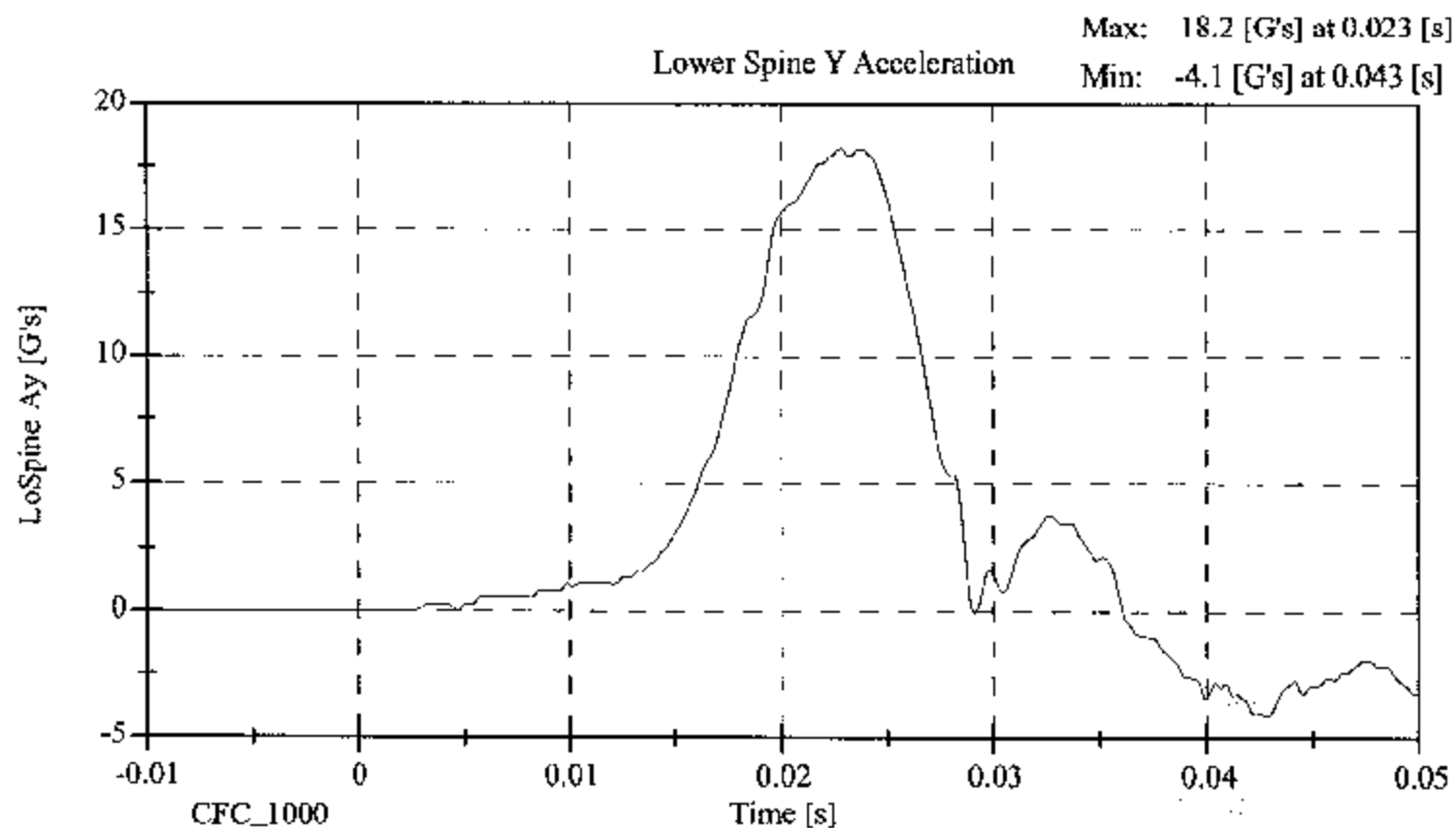
CONFIGURED FOR LEFT SIDE IMPACT

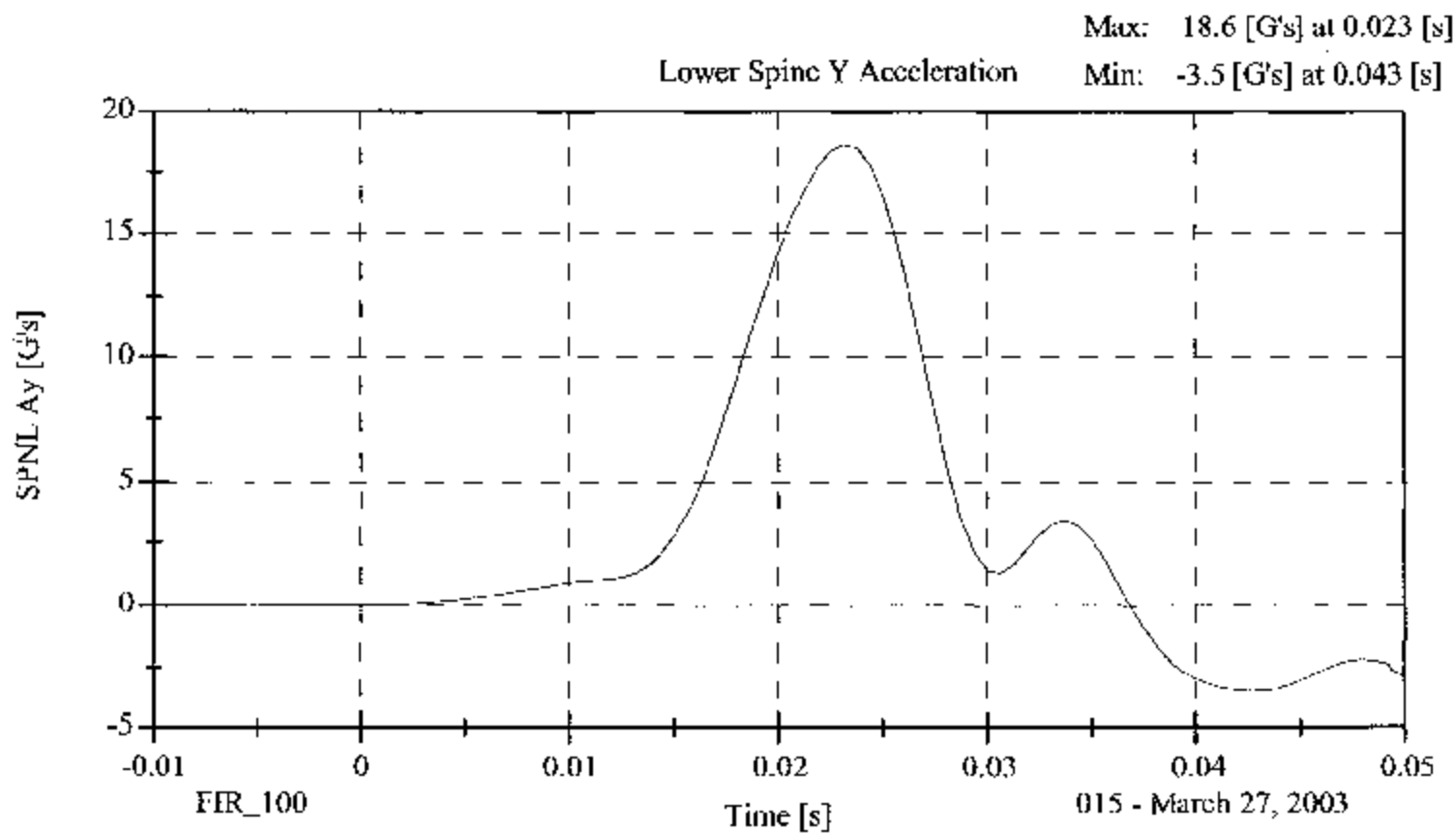
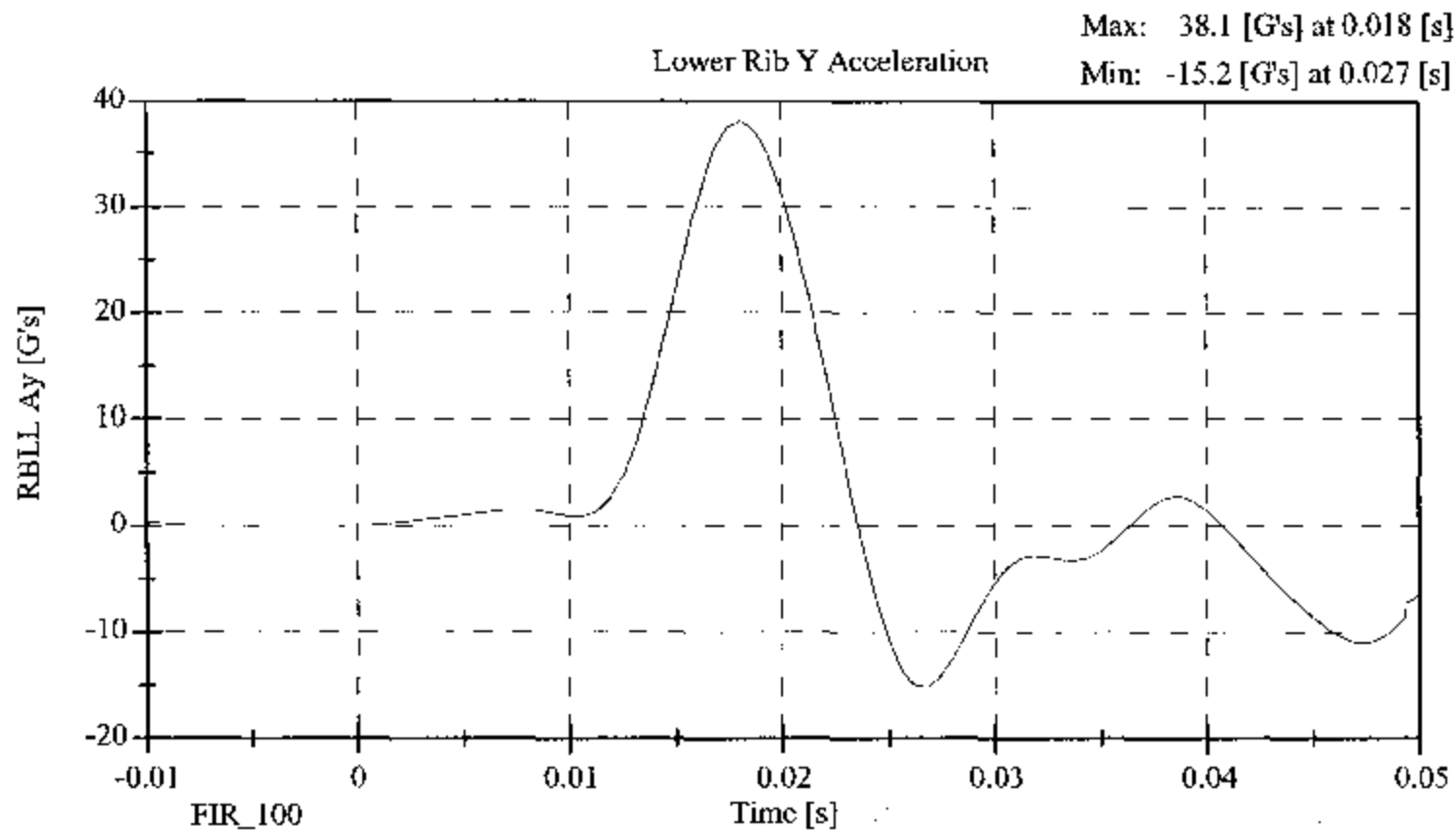
SID H3 Serial No.: 015 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	35.00
PROBE SPEED (m/s)	4.27 - 4.33	4.27
UPPER RIB (g's)	37 - 46	37.99
LOWER RIB (g's)	37 - 46	38.07
LOWER SPINE (g's)	15 - 22	18.62

REMARKS: None







**LATERAL PELVIS IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

3

Date: March 27, 2003

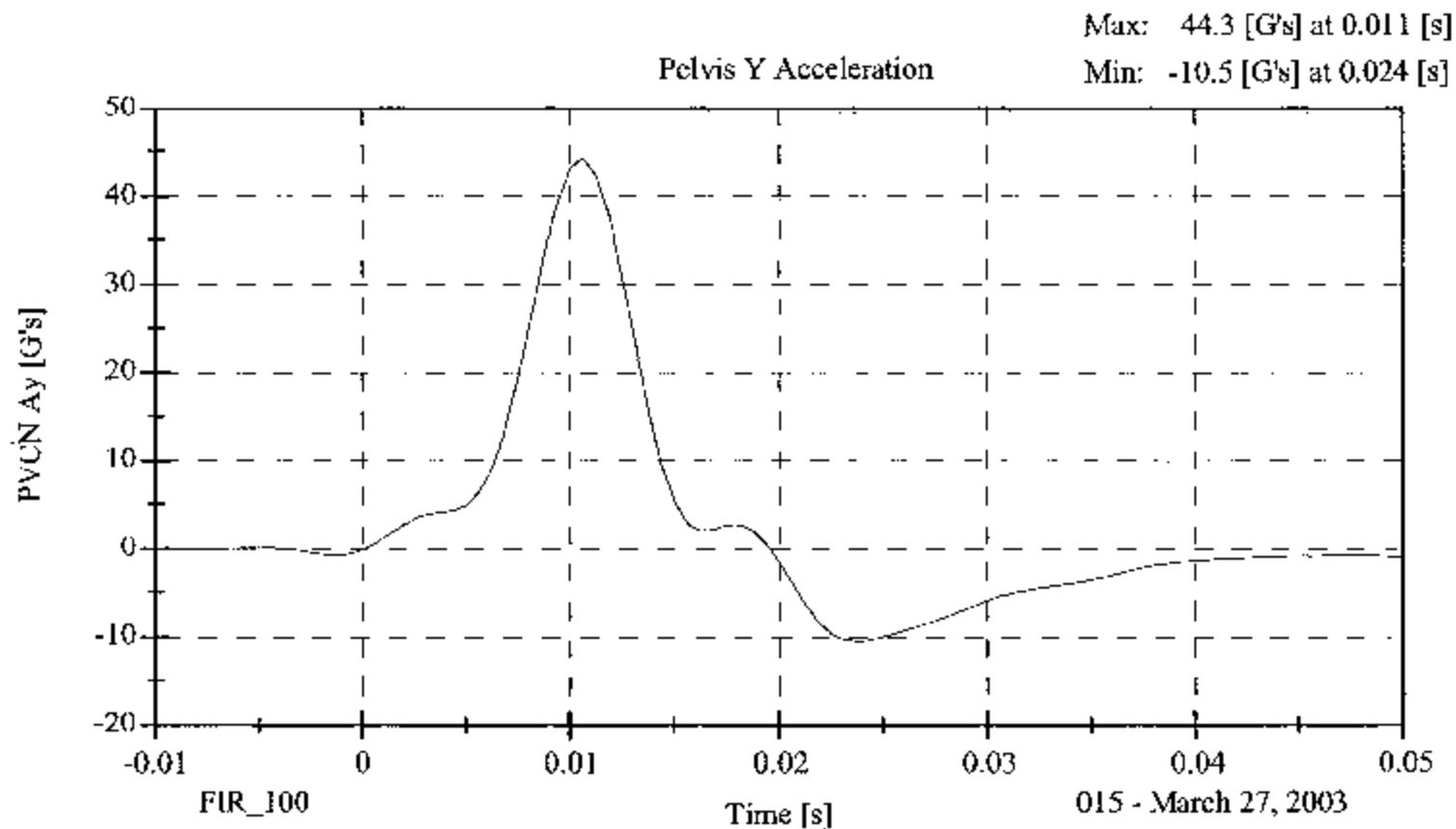
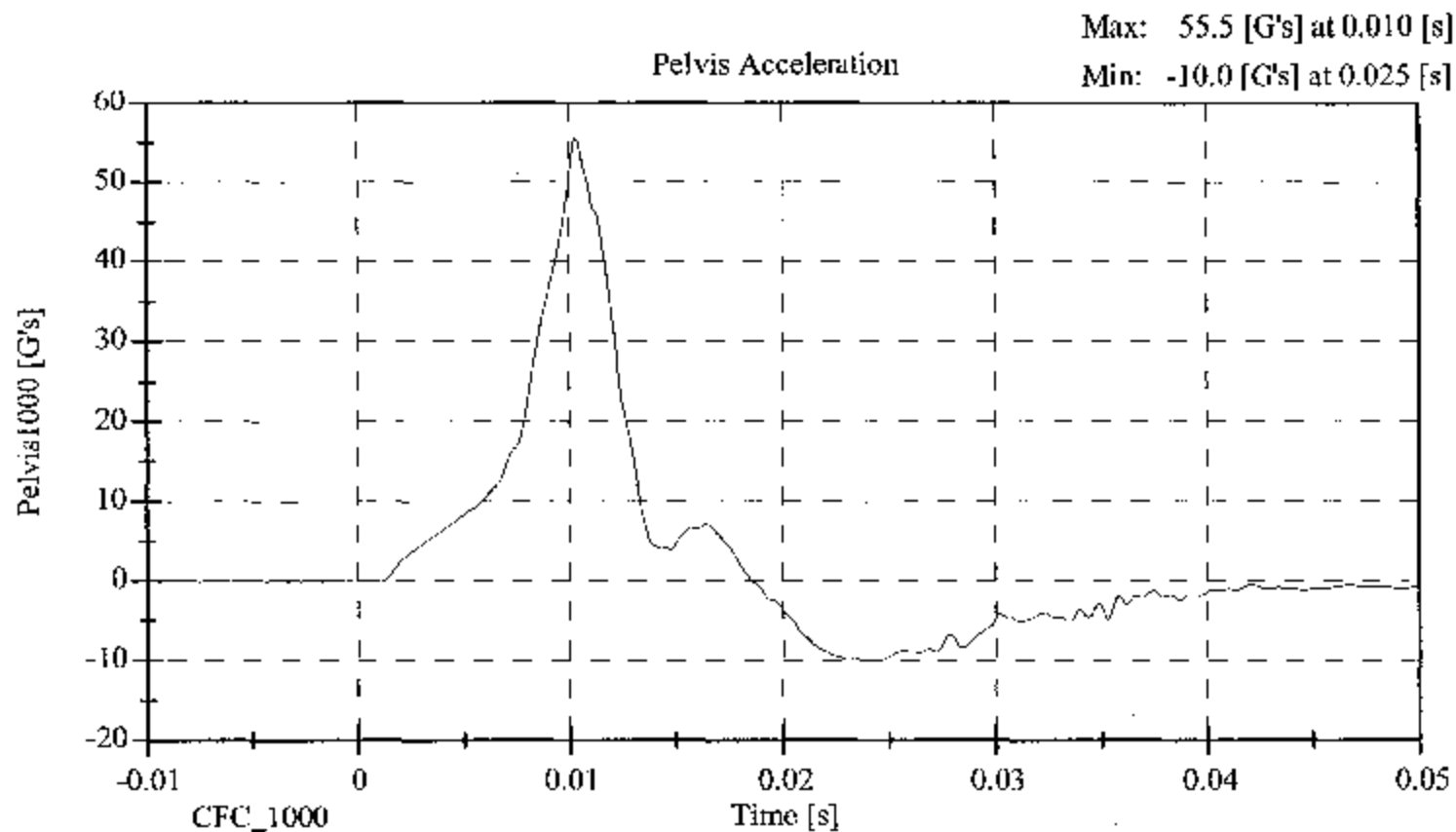
Laboratory Technician:

B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	35.00
PROBE SPEED (m/s)	4.27 - 4.33	4.27
PELVIS ACCELERATION (g's)	40 - 60	44.32

REMARKS: None

Pelvic Impact



**HEAD DROP TEST
POST-TEST**
(Test not required for SID certification)

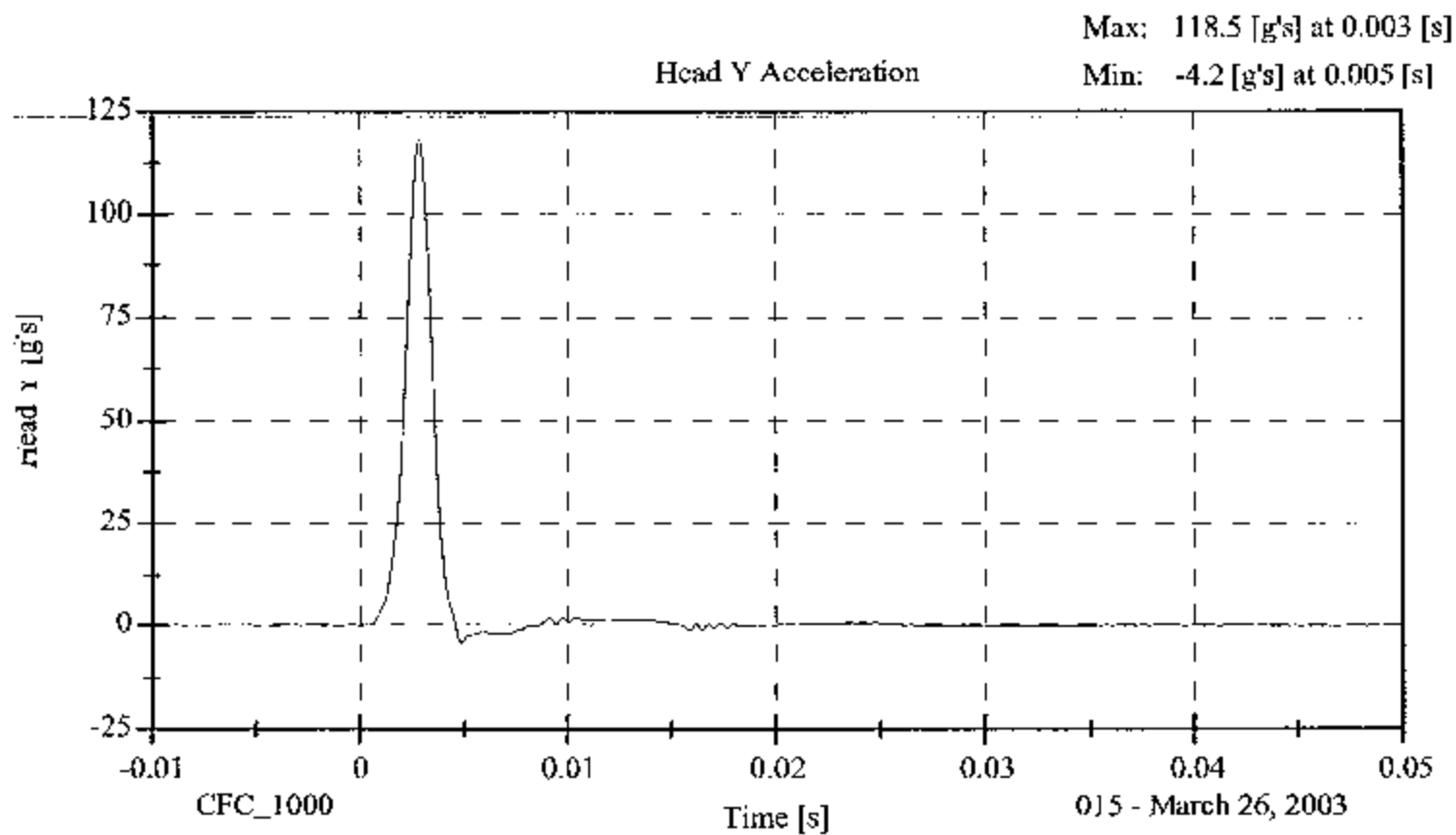
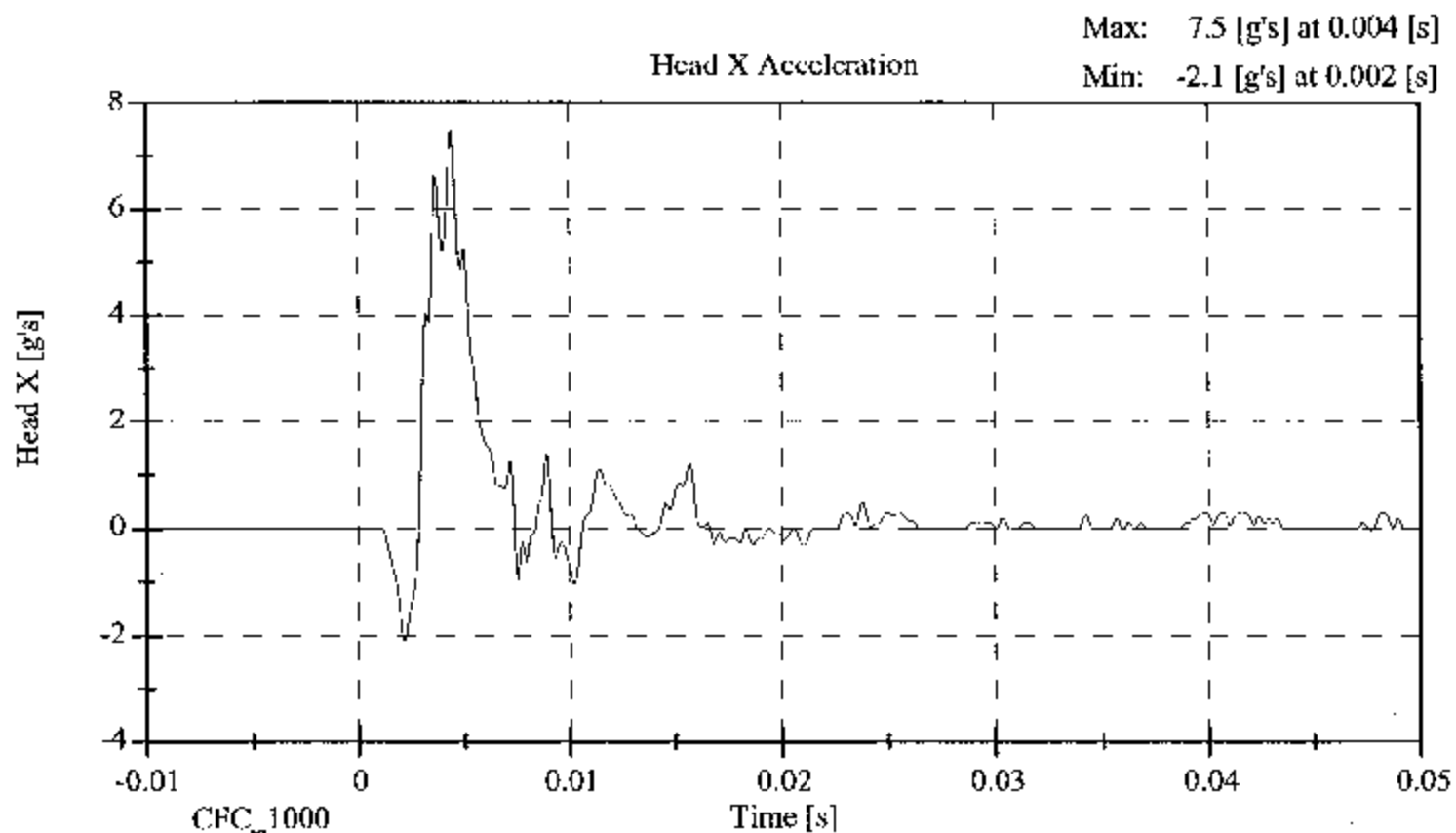
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 3
Date: March 26, 2003 Laboratory Technician: B. Swiecicki

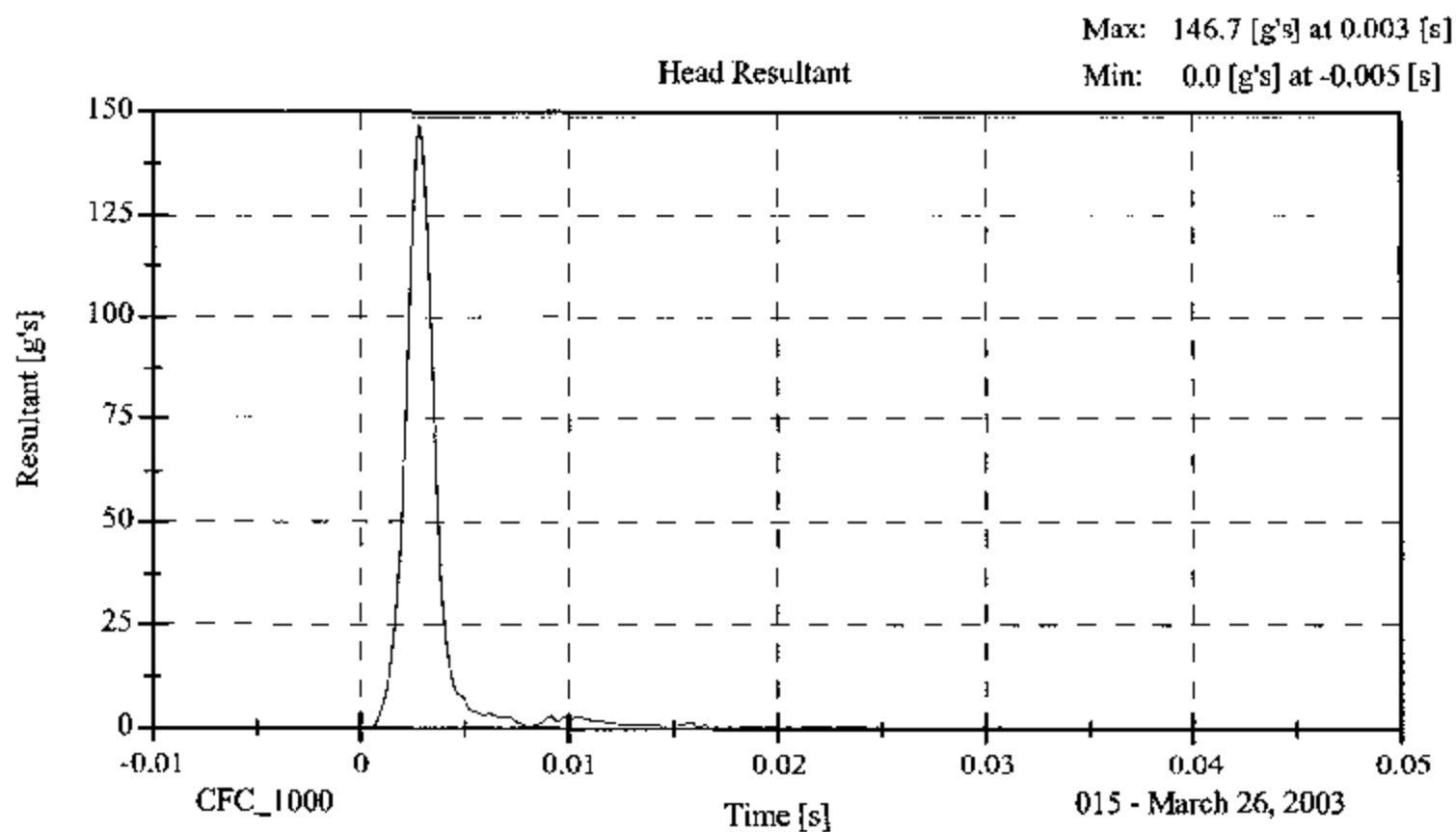
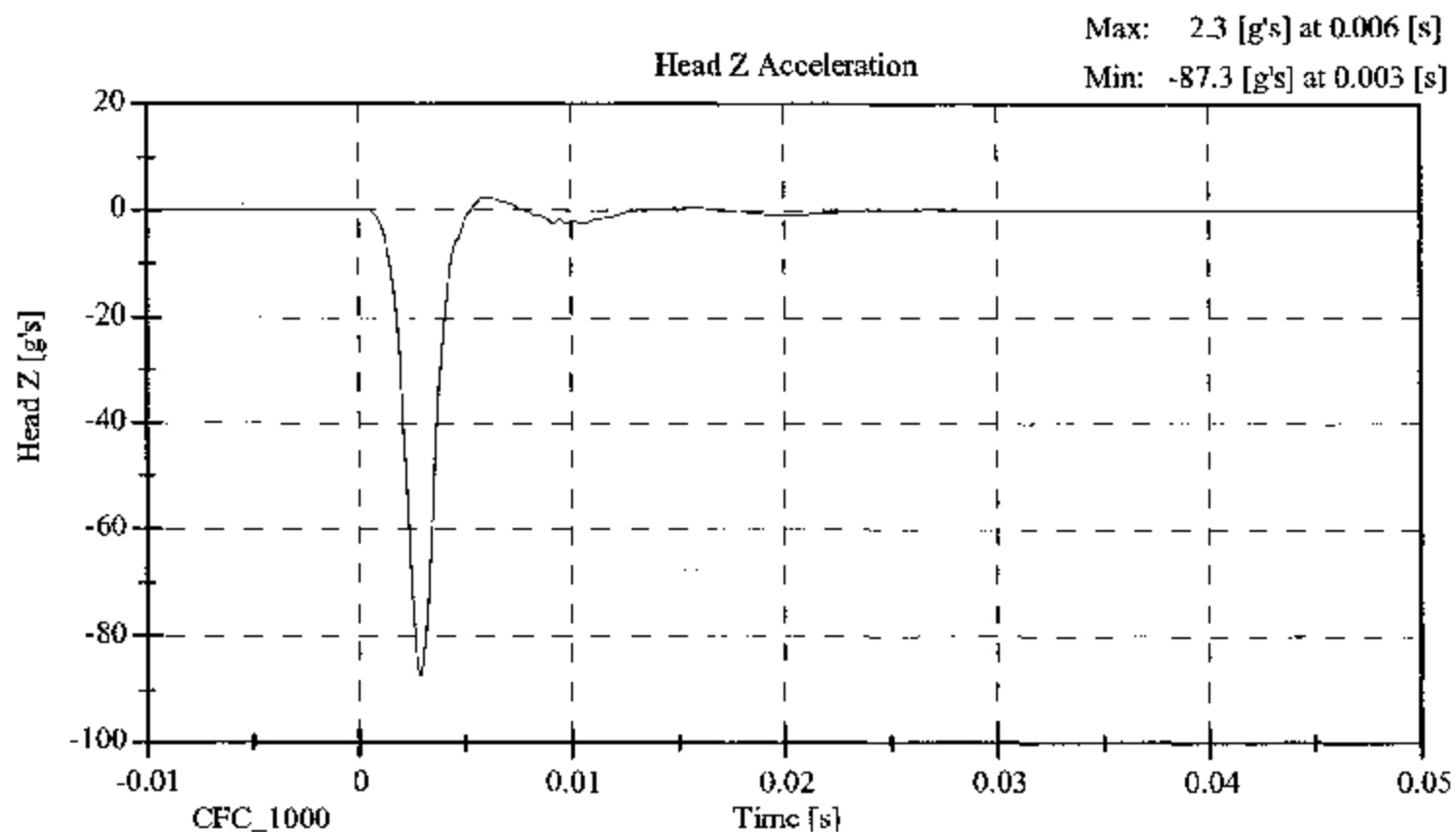
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	20.6 – 22.2	21.7
RELATIVE HUMIDITY (%)	10 – 70	31.00
PEAK RESULTANT ACCELERATION (Gs)	120 – 150	146.65
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 15	7.50
CURVE PERCENT NONMODAL (%)	< 15	2.30

REMARKS: None

Head Drop



Head Drop



015 - March 26, 2003

LATERAL NECK BENDING TEST
POST-TEST
(Test not required for SID certification)

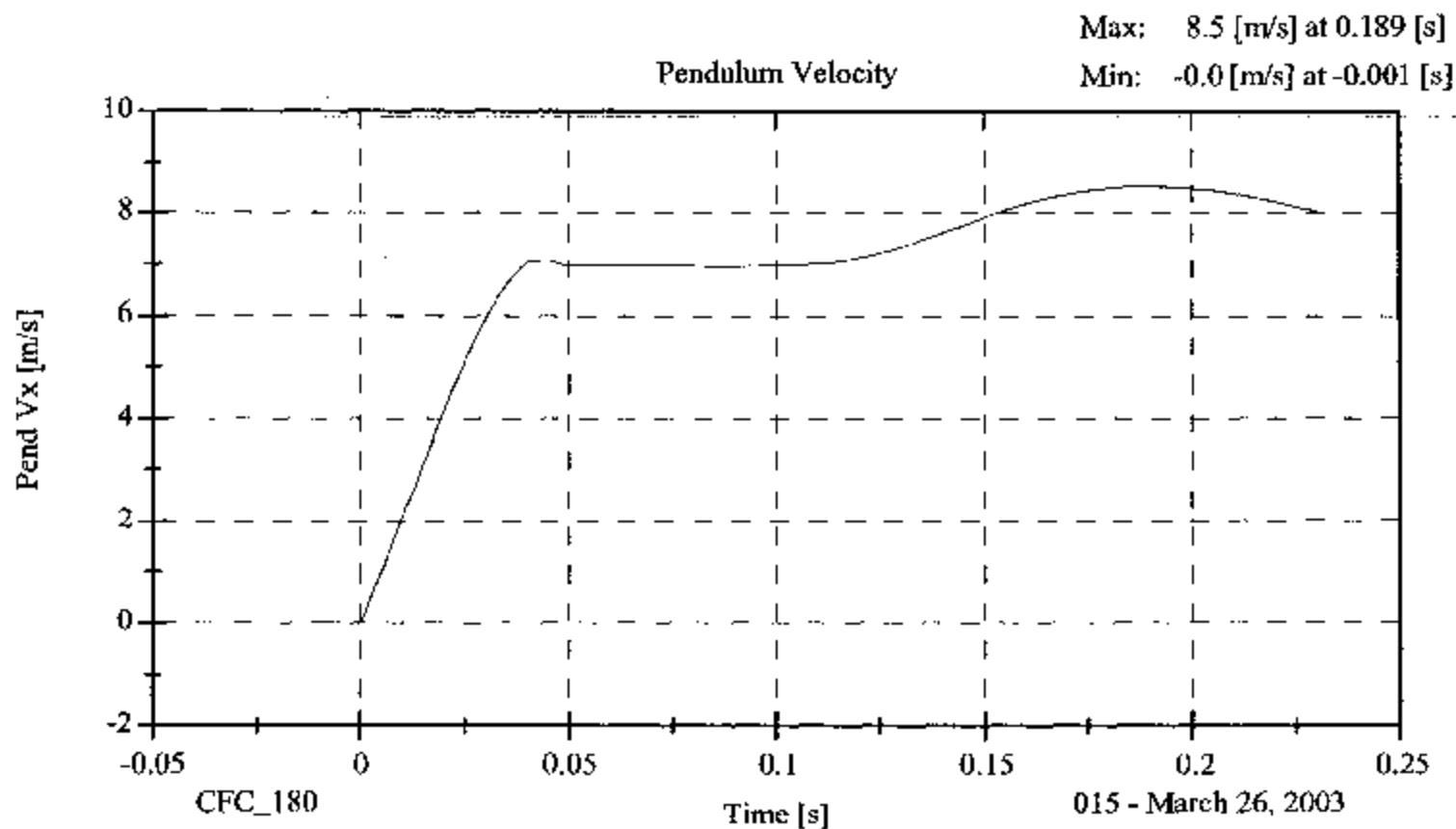
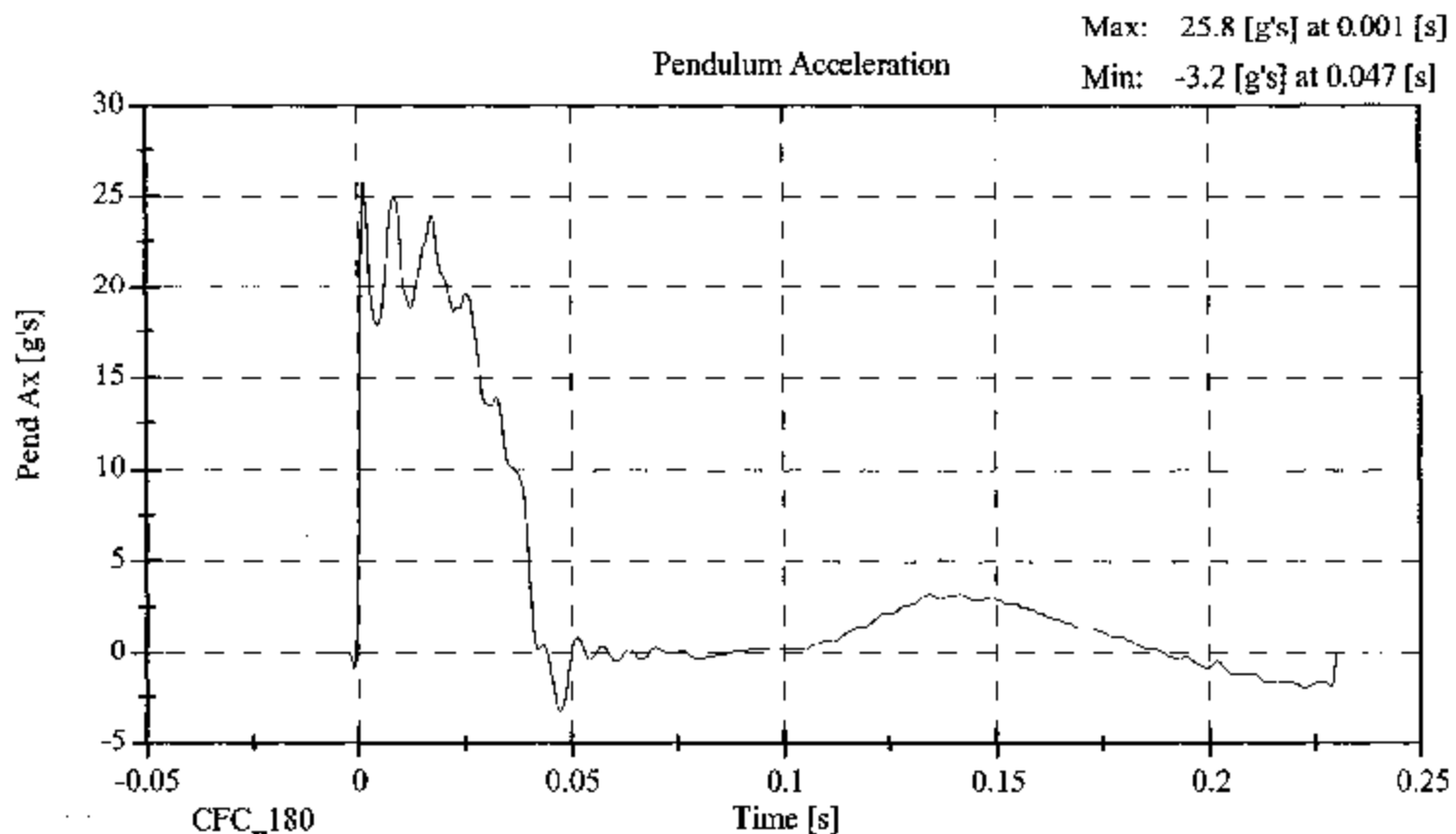
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 3
Date: March 26, 2003 Laboratory Technician: R. Swiecicki

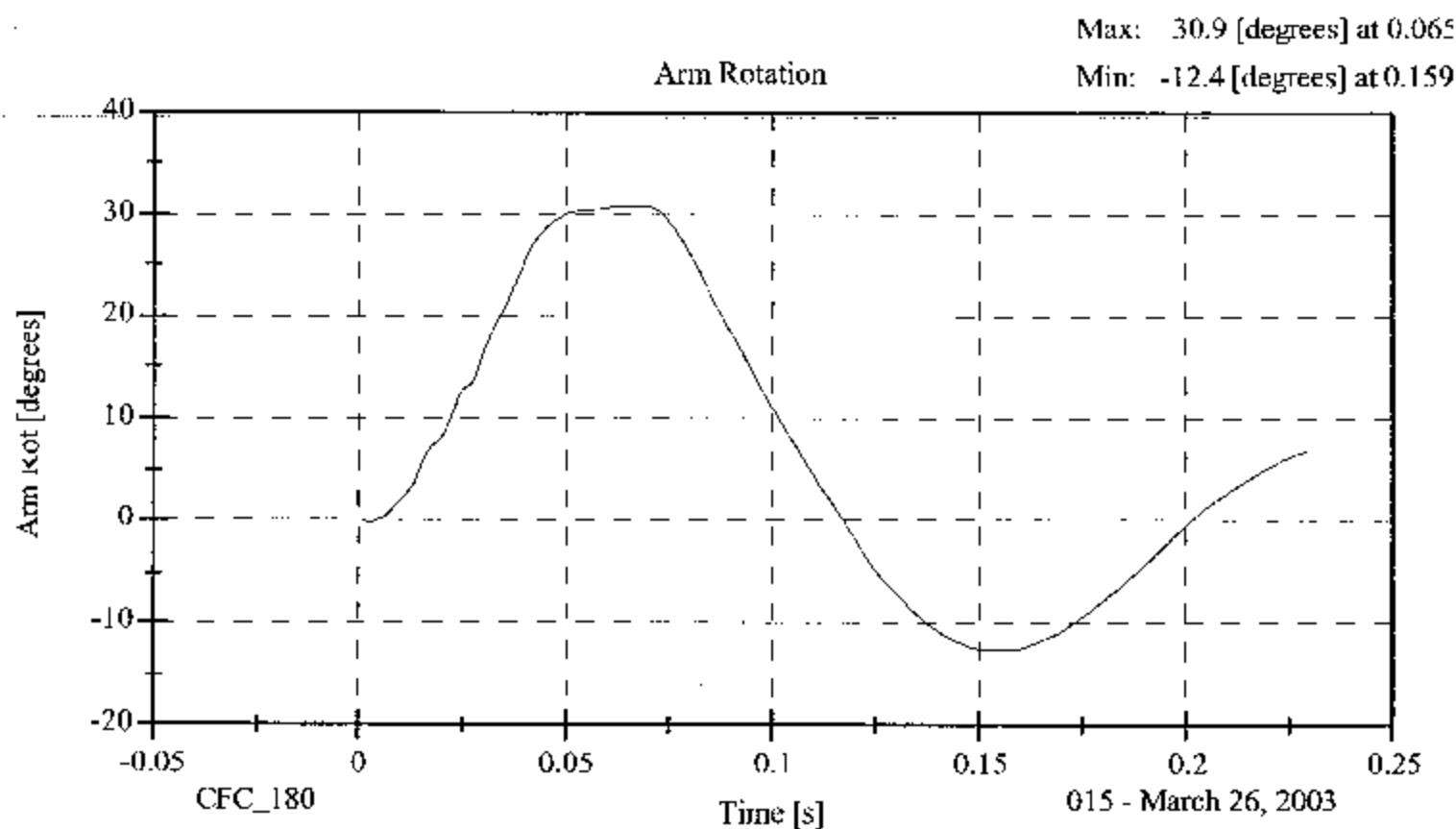
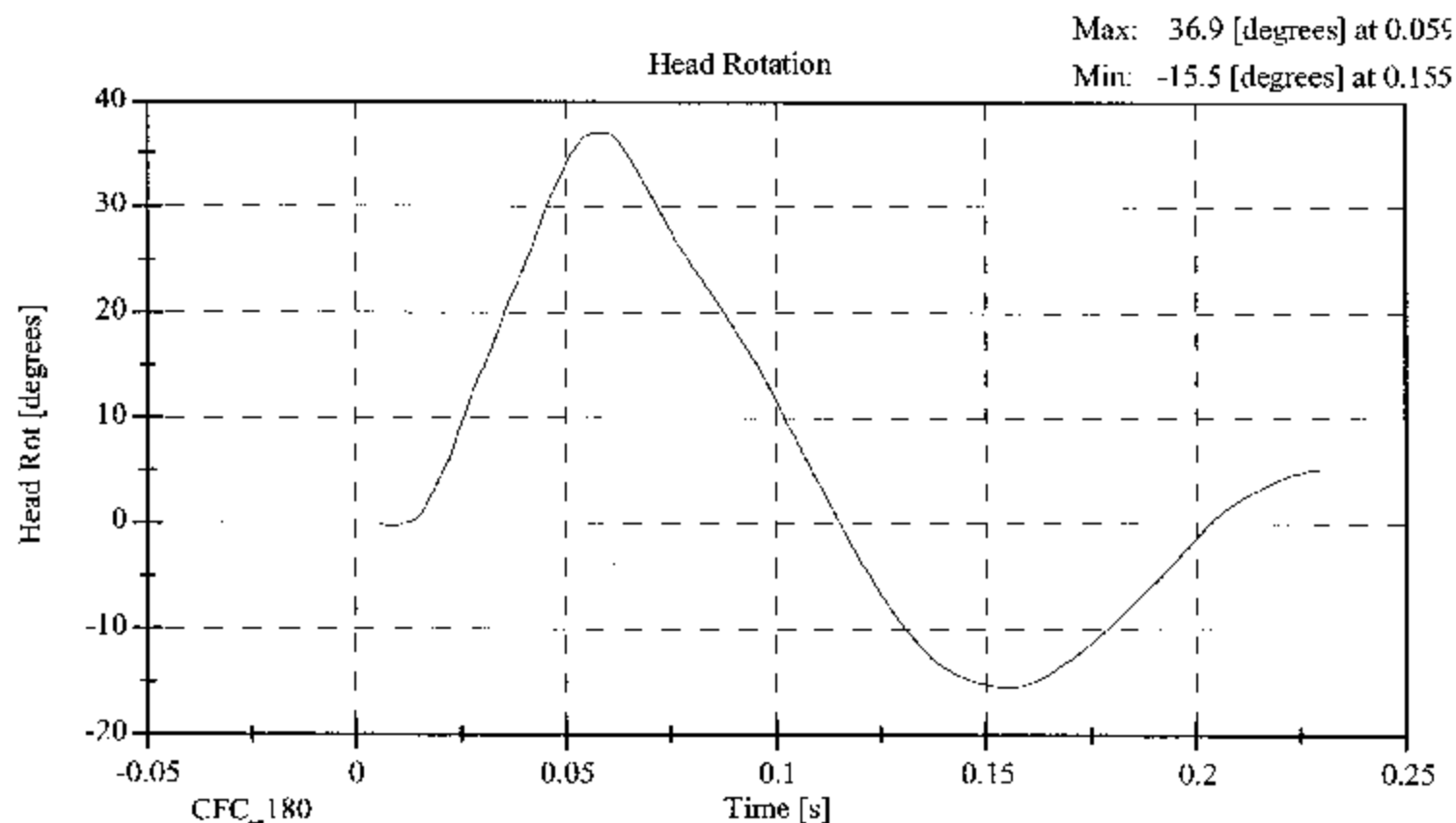
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	20.6 - 22.2	21.7
RELATIVE HUMIDITY (%)	10 - 70	30.00
IMPACT VELOCITY (m/s)	6.89 - 7.13	7.03
PENDULUM DELTA V		
DELTA V @ 10 ms (m/s)	1.96 - 2.55	2.06
DELTA V @ 20 ms (m/s)	4.12 - 5.10	4.15
DELTA V @ 30 ms (m/s)	5.73 - 7.01	5.93
DELTA V @ 40-70 ms (m/s)	6.27 - 7.64	7.10
D PLANE ROTATION		
MAXIMUM ROTATION (deg)	64 - 78	67.59
ROT. ANGLE TIME to ZERO (ms)	50 - 70	56.20
MOMENT ABOUT THE OCCIPITAL CONDYLE		
MAX OCCIPITAL MOMENT (Nm)	88 - 108	88.20
OCCIPITAL MOMENT DECAY (ms)	40.0 - 60.0	46.80
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT		
ROTATION wrt MOMENT (ms)	0 - 20	7.10

REMARKS: None

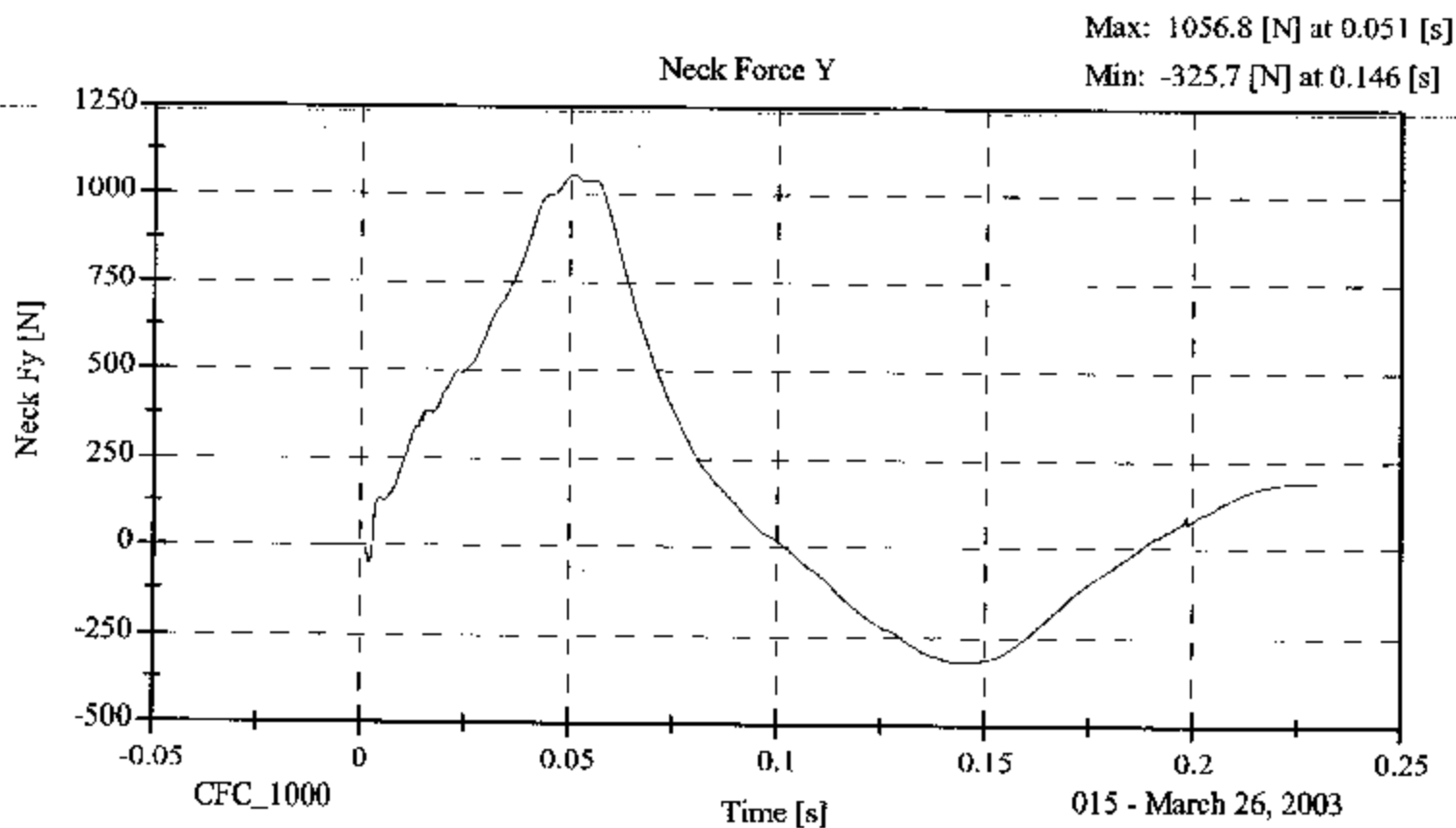
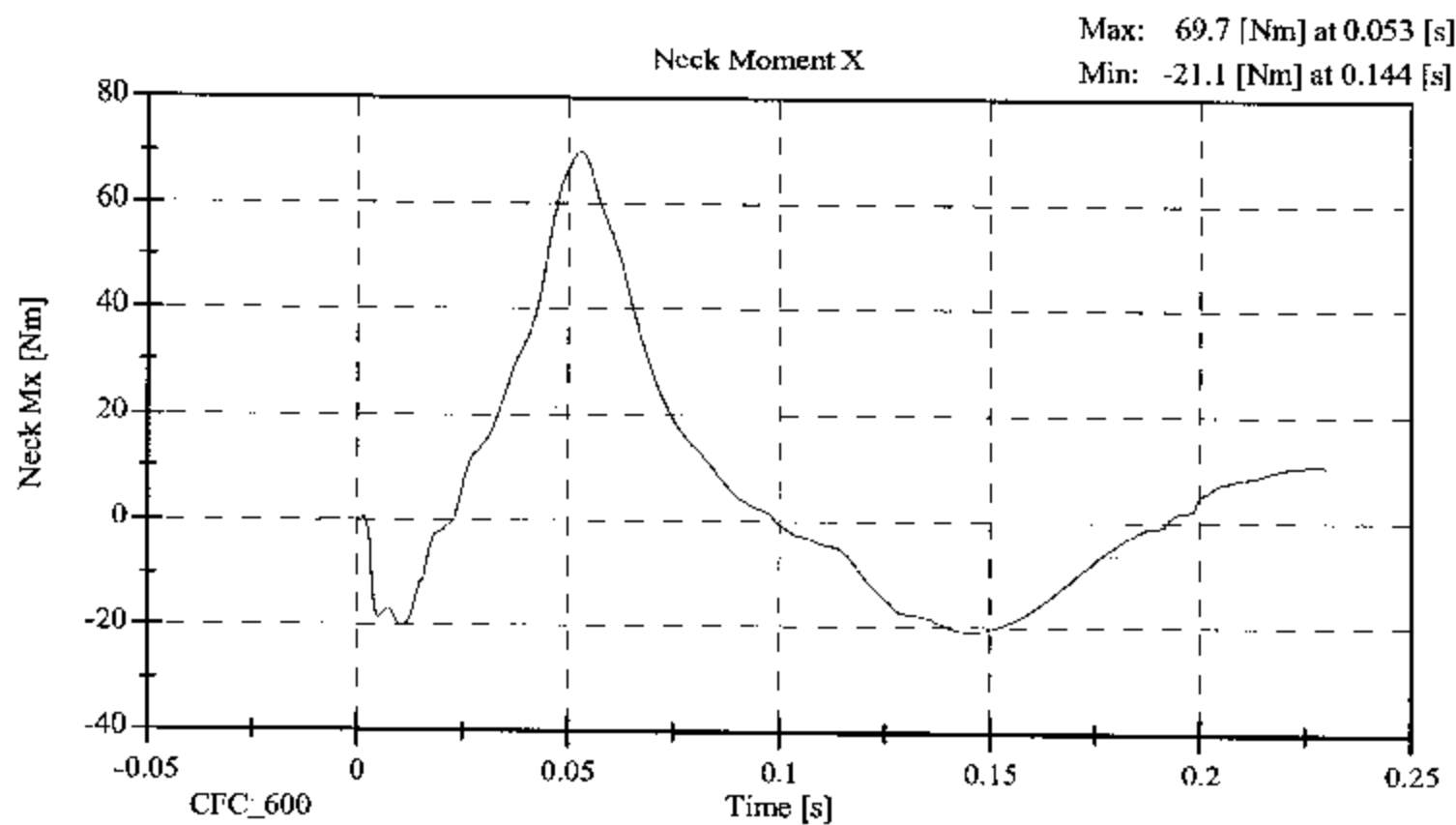
Neck Test



Neck Test

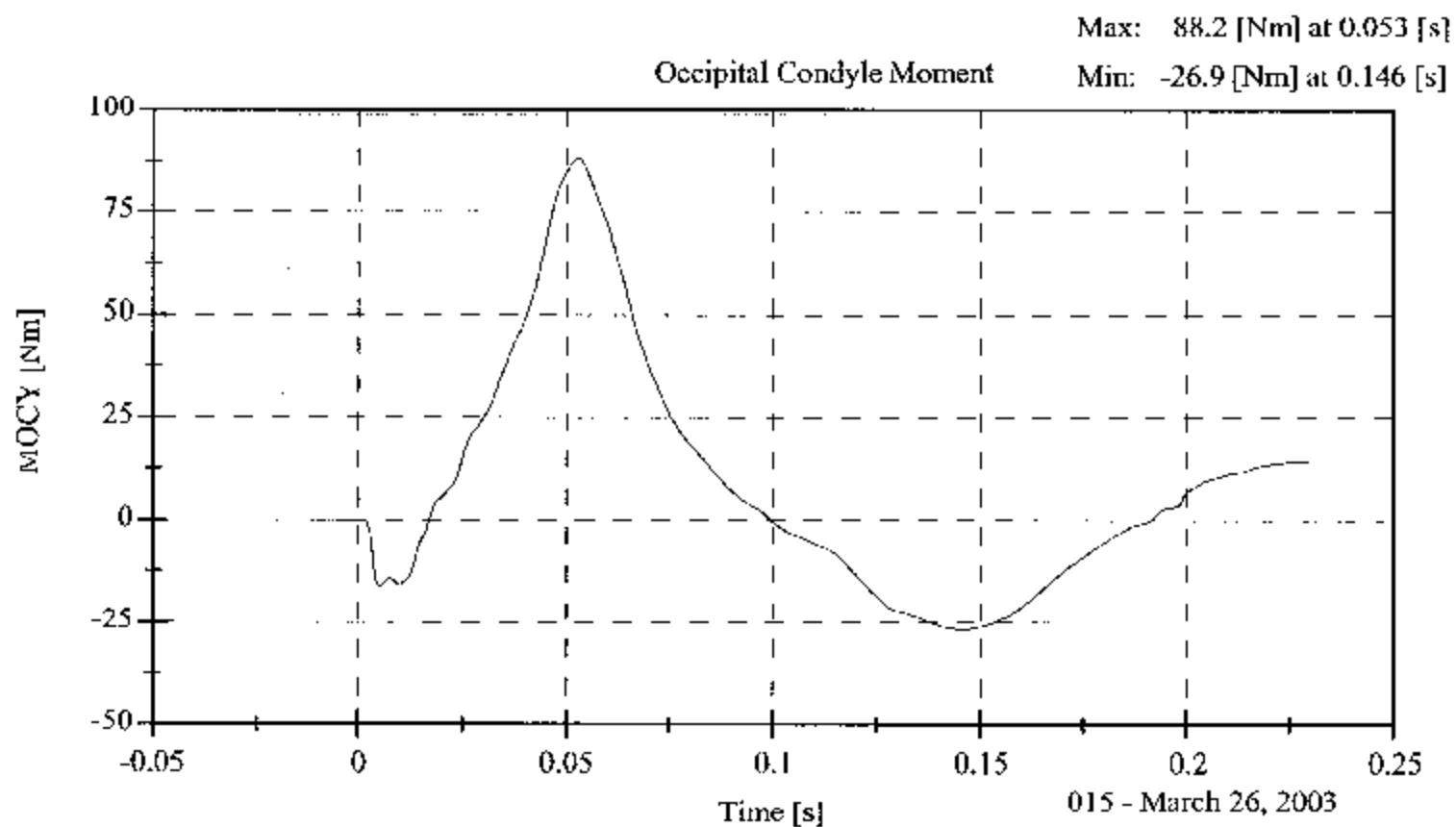
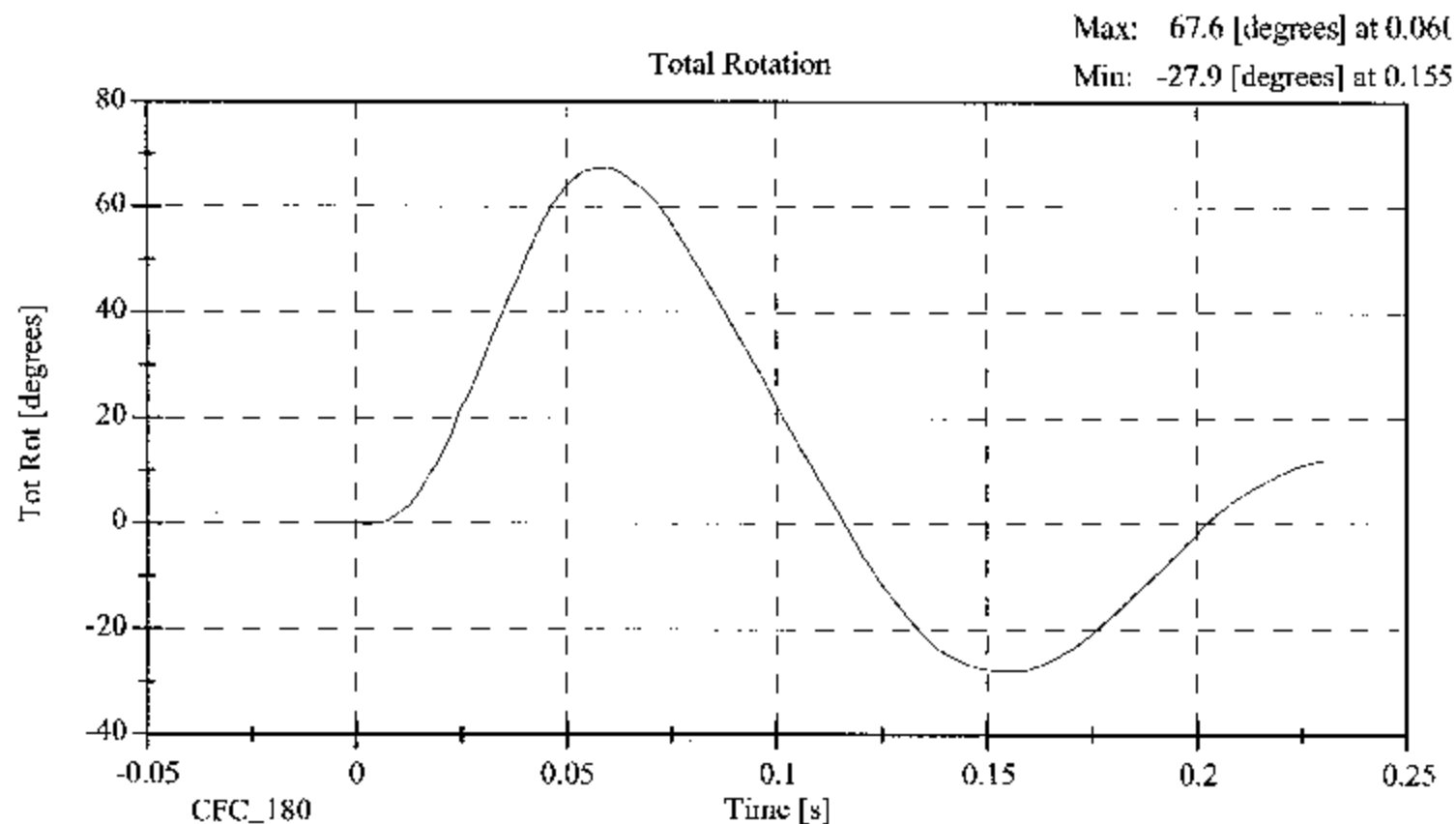


Neck Test



015 - March 26, 2003

Neck Test



**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	35.00
FORCE @ 13 mm (N)	104 - 162	115.65
FORCE @ 19 mm (N)	163 - 221	175.70
FORCE @ 25 mm (N)	222 - 280	253.10
FORCE @ 33 mm (N)	325 - 391	364.75

REMARKS: None

Dummy S/N 015

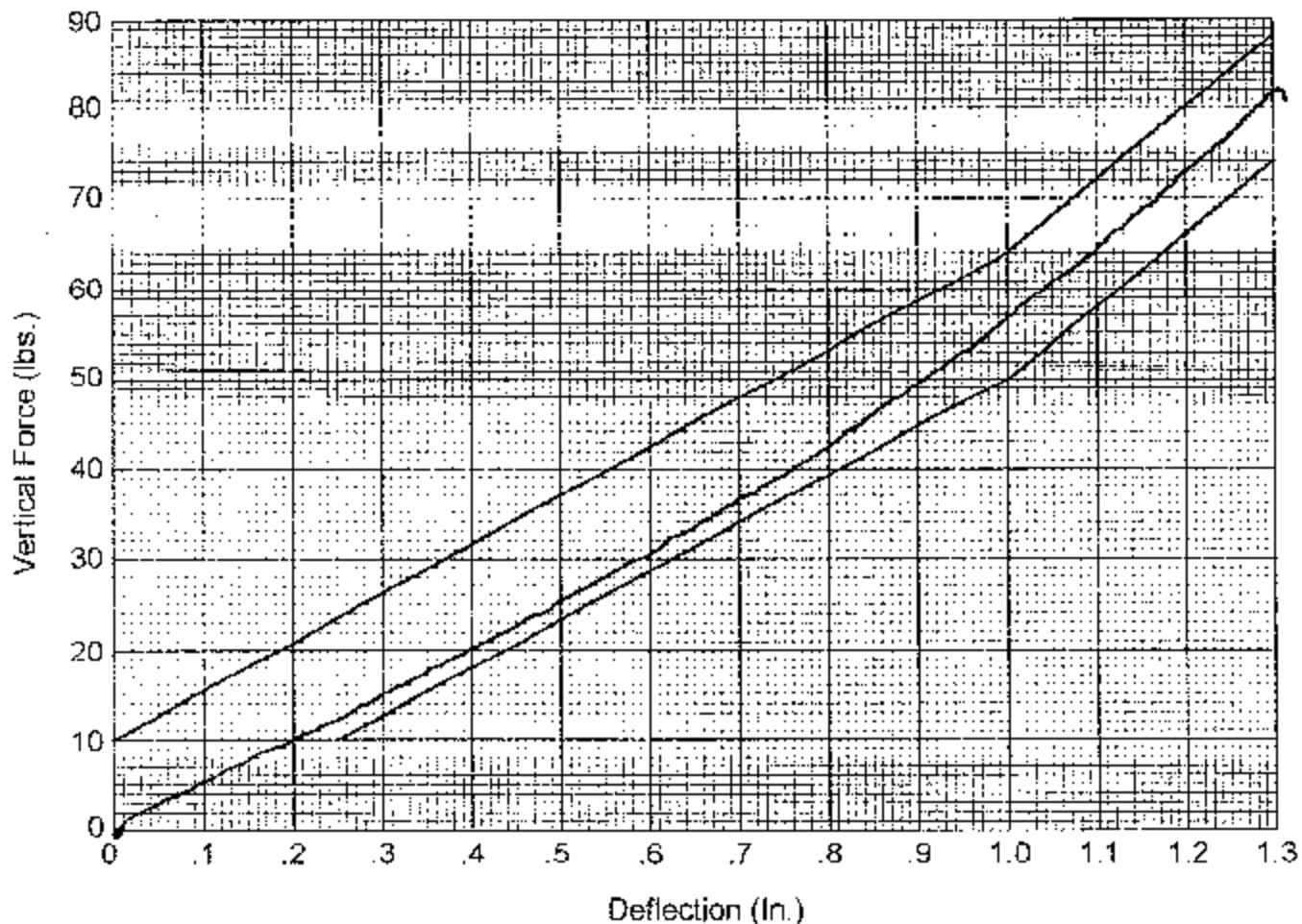
W/A _____

Date 03-27-03

Performed By [Signature]

Temp. 70°

Humidity 35%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

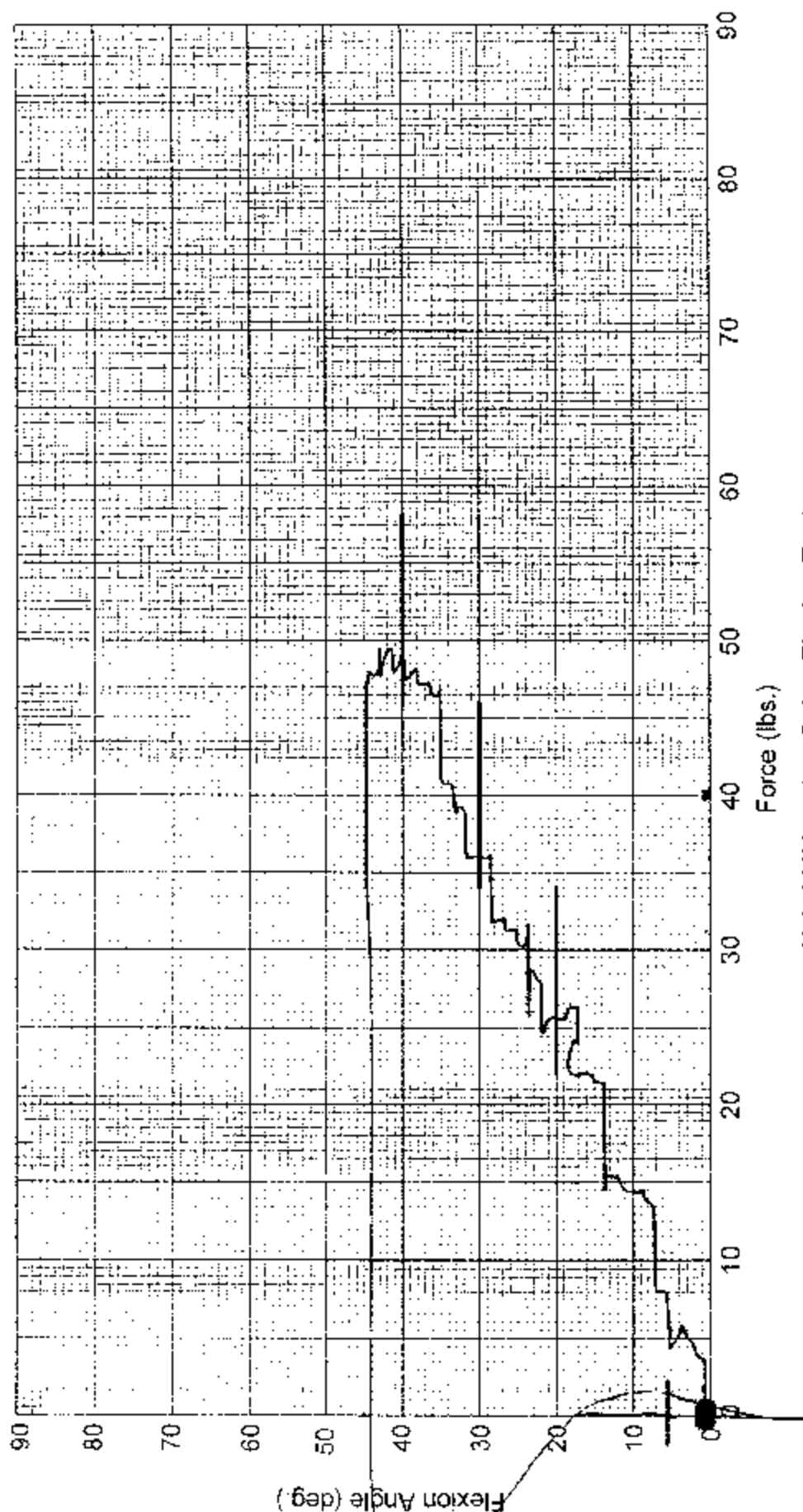
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	38.00
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	113.4
FORCE @ 30° (N)	151.2 - 204.6	157.9
FORCE @ 40° (N)	204.6 - 258	213.5
RETURN ANGLE	12° max.	5.8

REMARKS: None

Dummy S/N --- 015 ---
 WIA ---
 Date 03-28-03
 Performed By [Signature]
 Temp. 70°
 Humidity 58%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 3
 Date: March 27, 2003 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016	Sequential Test Number: 3	
Date: March 27, 2003	Laboratory Technician: B. Swiecicki	

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	368

REMARKS: None

**LATERAL THORAX IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

3

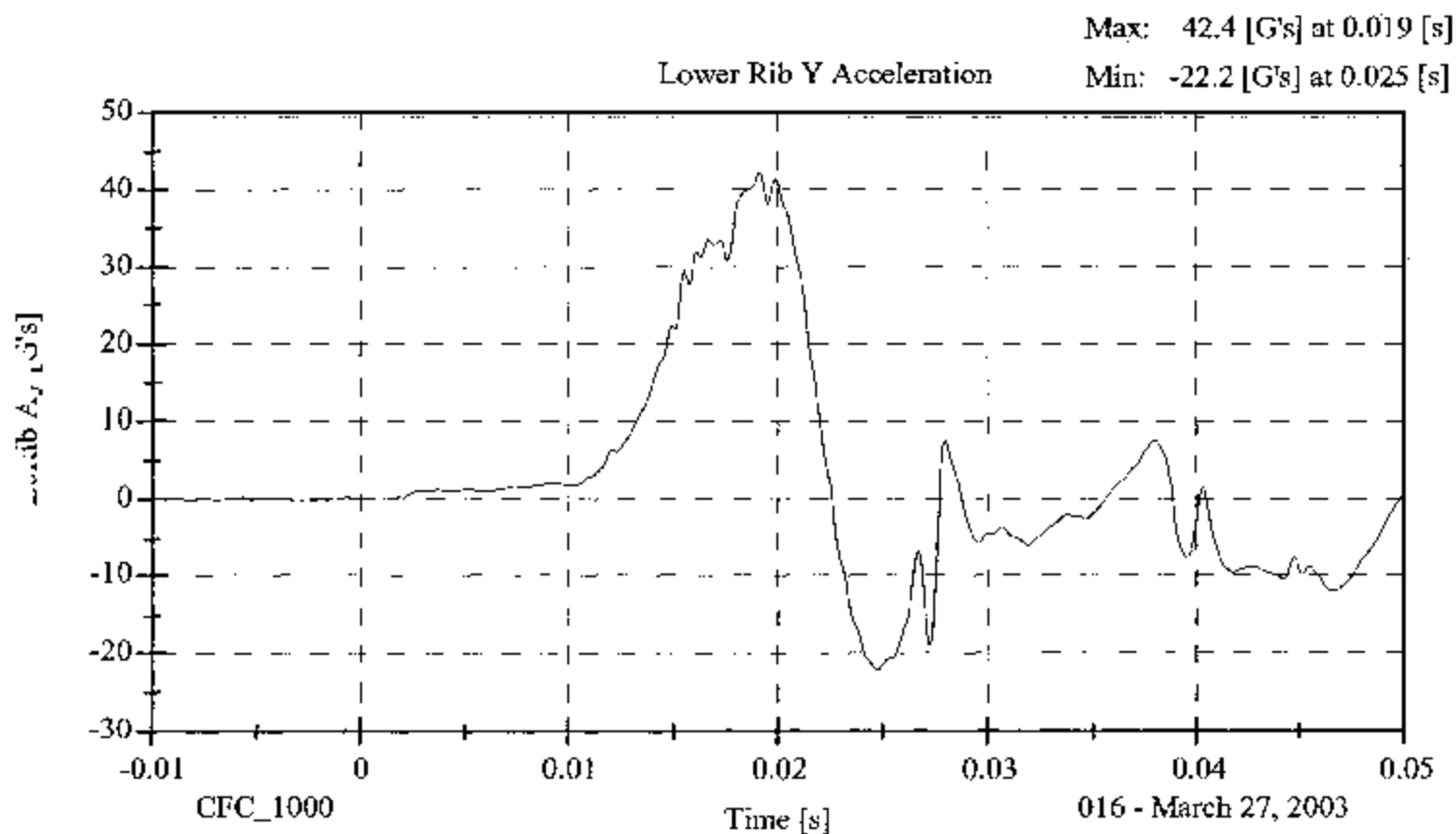
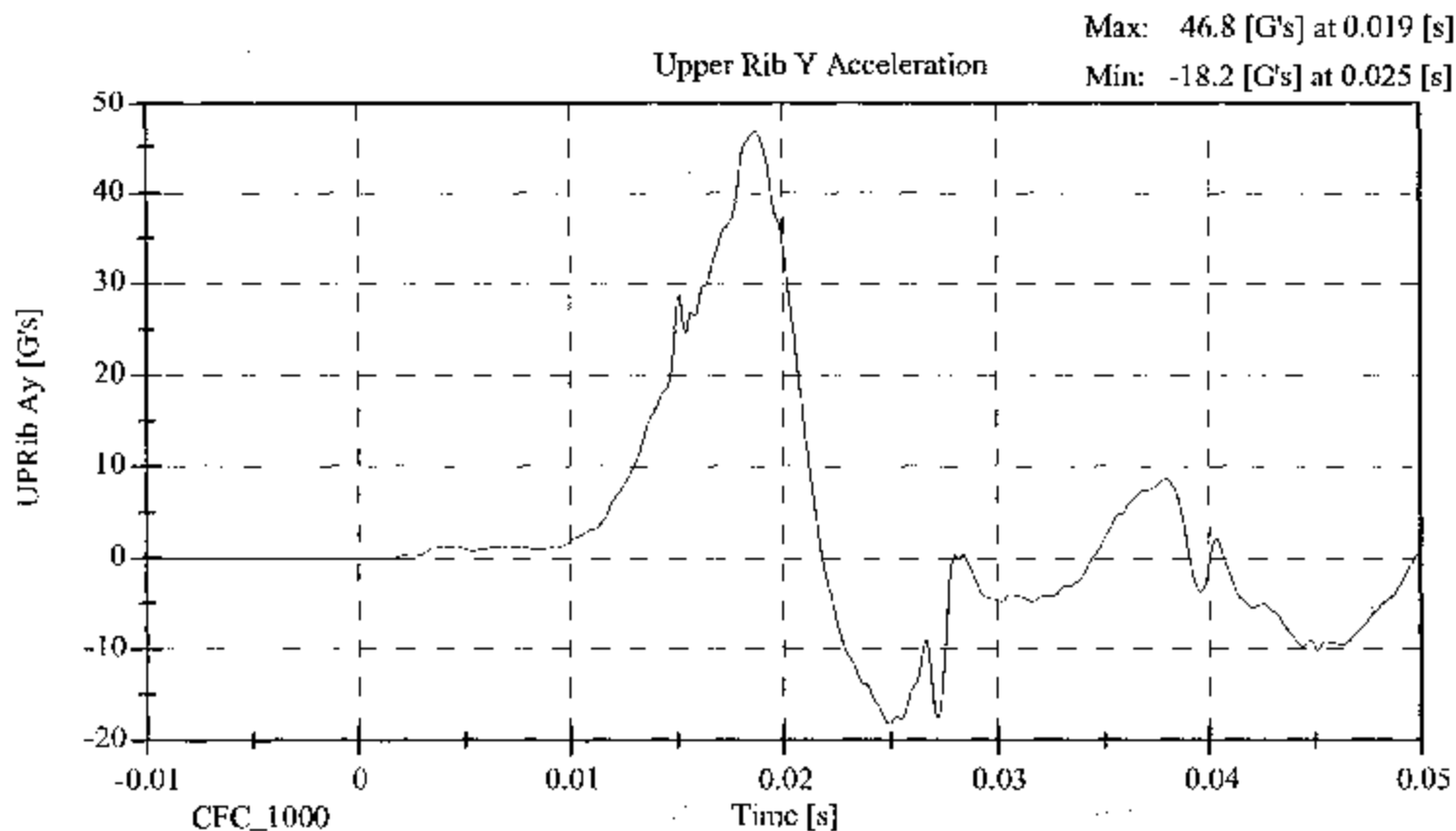
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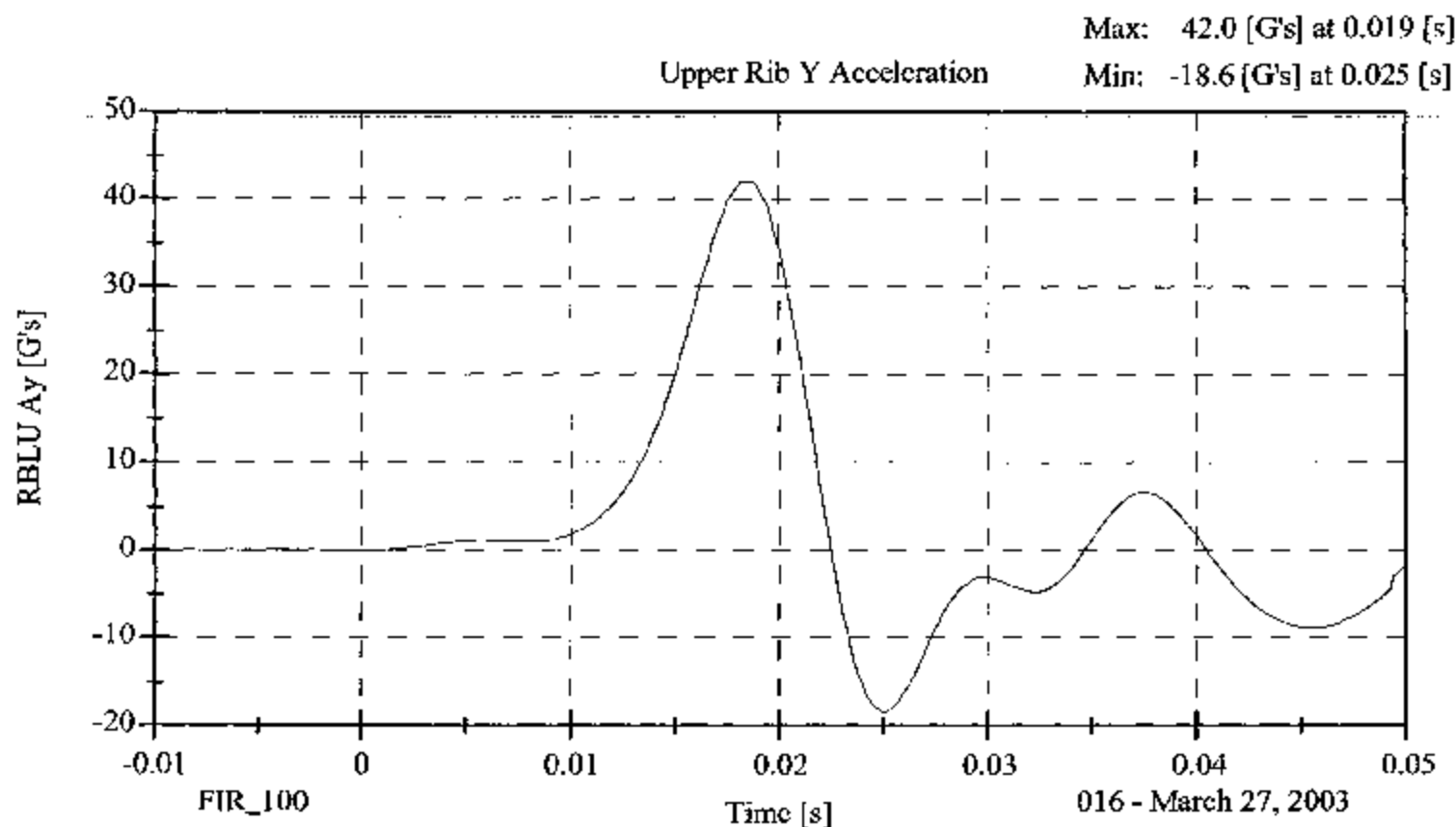
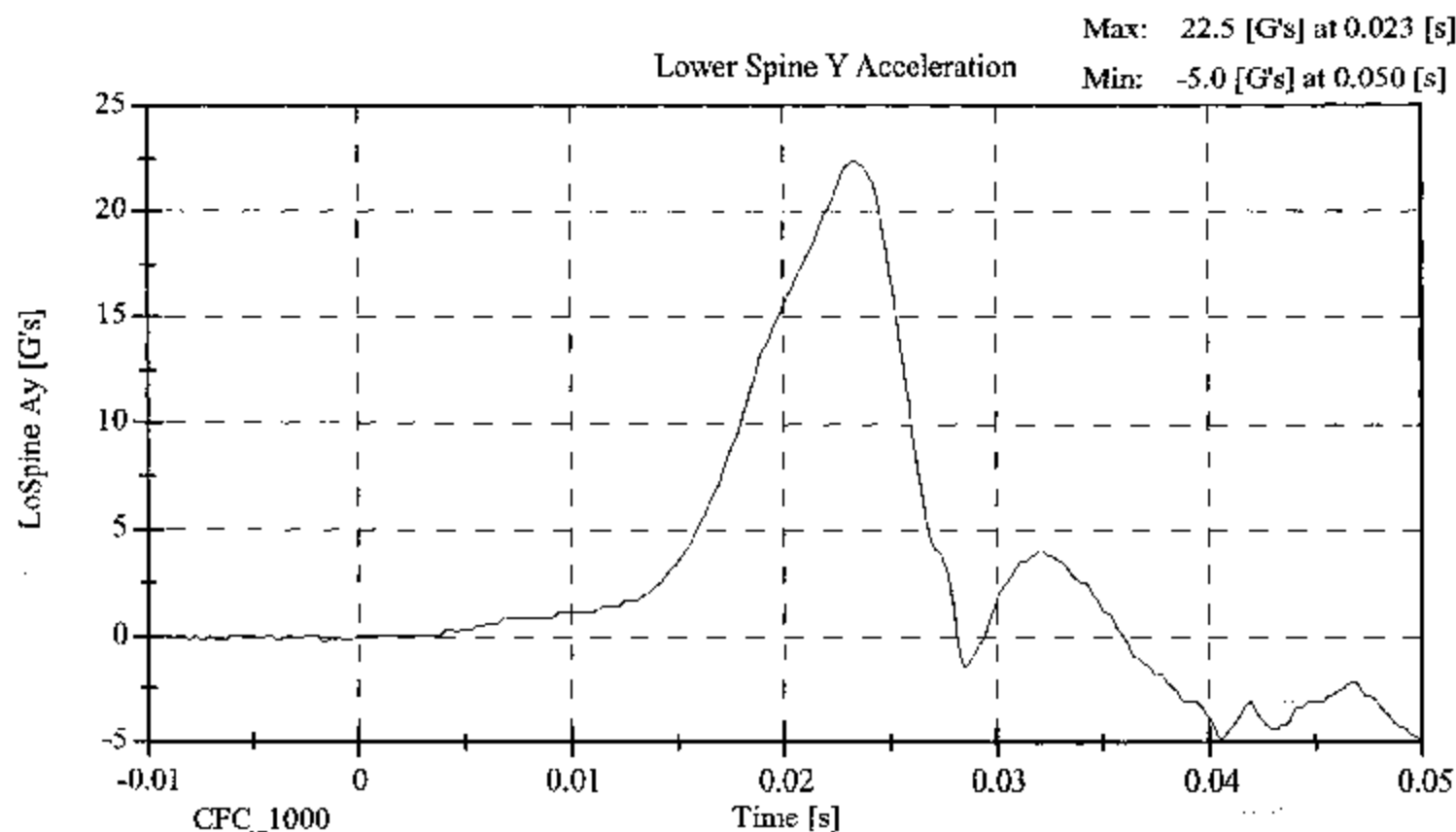
Laboratory Technician:

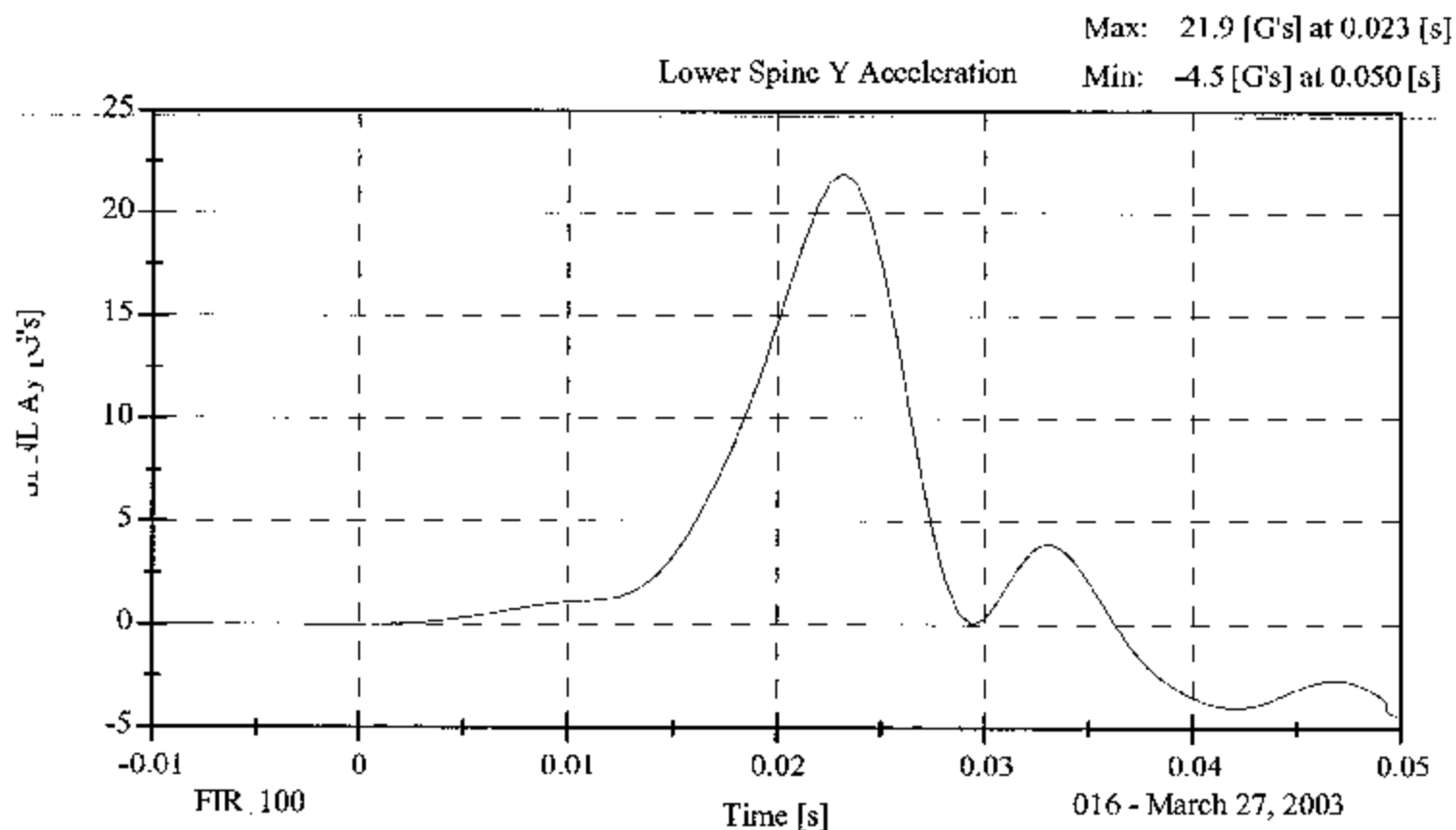
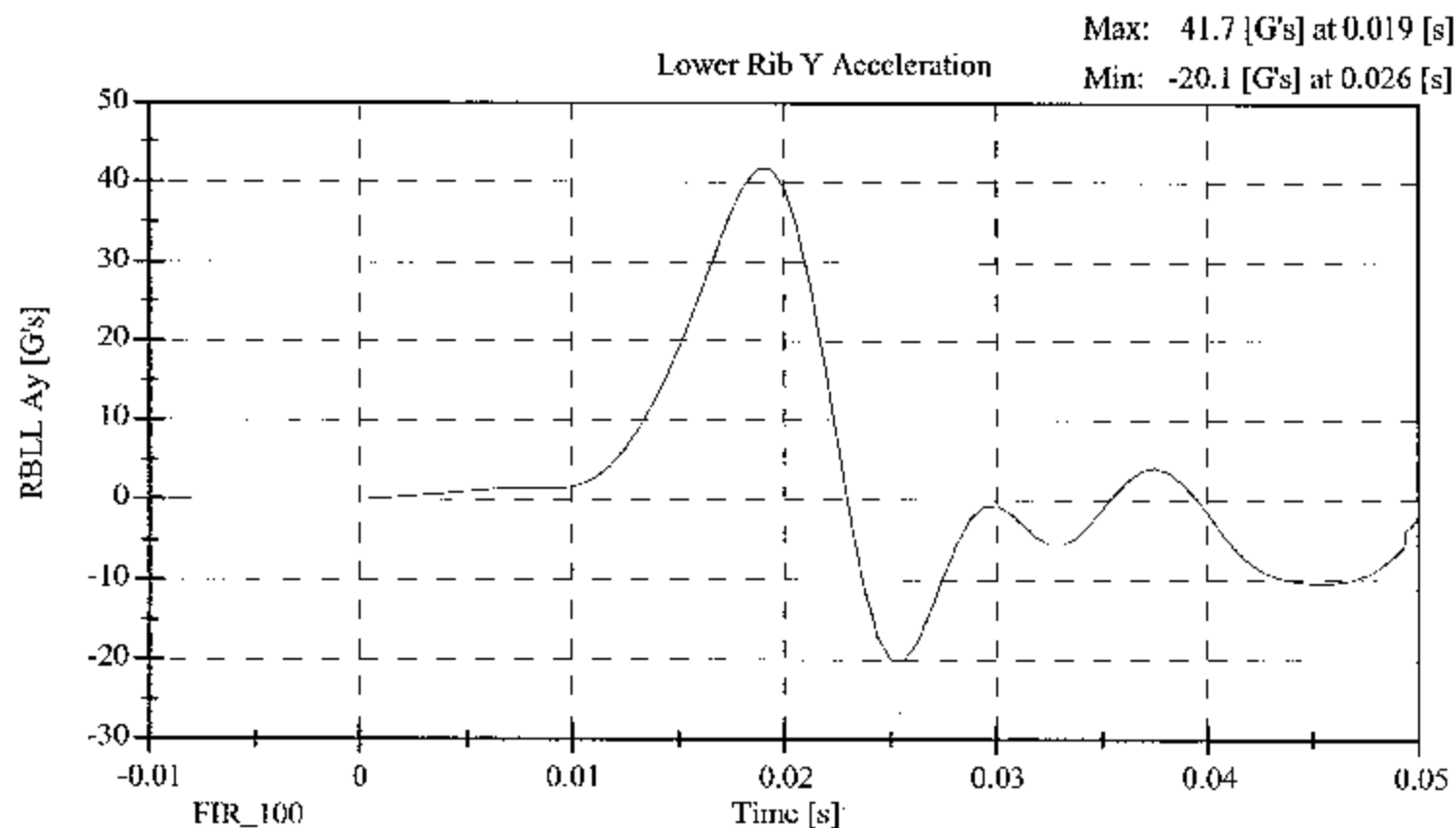
B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	36.00
PROBE SPEED (m/s)	4.27 - 4.33	4.29
UPPER RIB (g's)	37 - 46	41.98
LOWER RIB (g's)	37 - 46	41.69
LOWER SPINE (g's)	15 - 22	21.92

REMARKS: None







**LATERAL PELVIS IMPACT TEST
POST TEST**

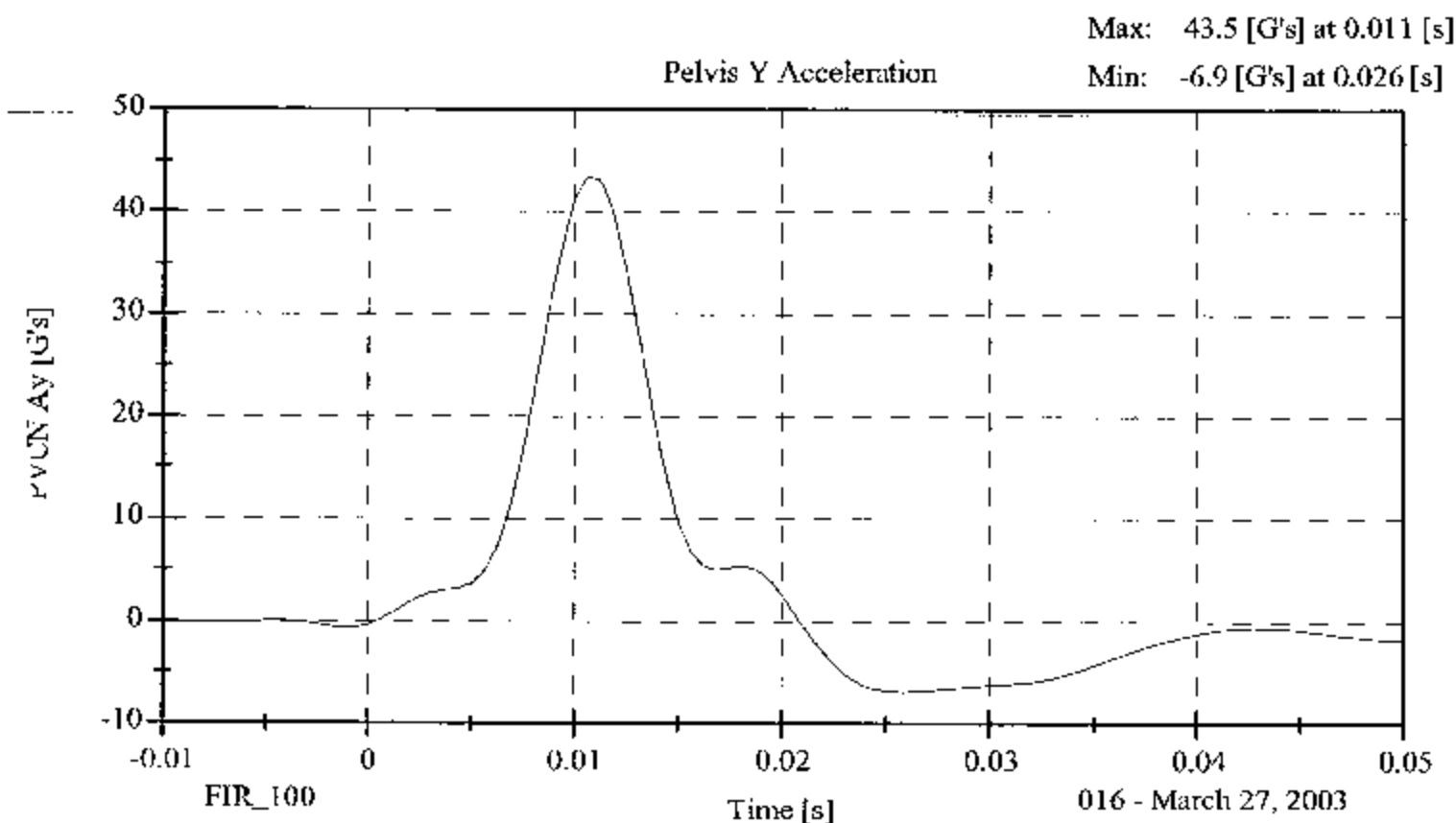
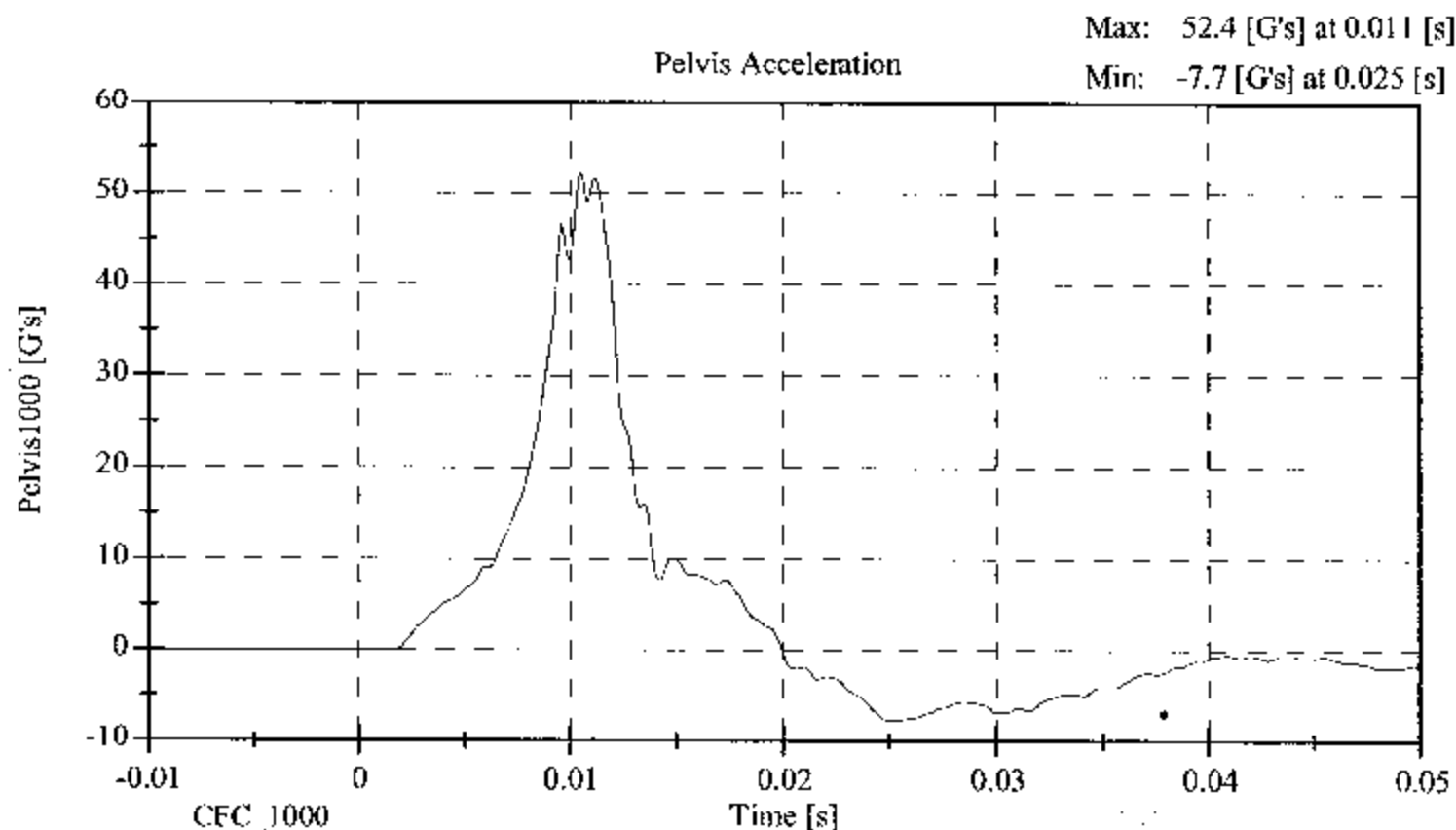
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	36.00
PROBE SPEED (m/s)	4.27 - 4.33	4.32
PELVIS ACCELERATION (g's)	40 - 60	43.48

REMARKS: None

Pelvic Impact



**HEAD DROP TEST
POST-TEST**
(Test not required for SID certification)

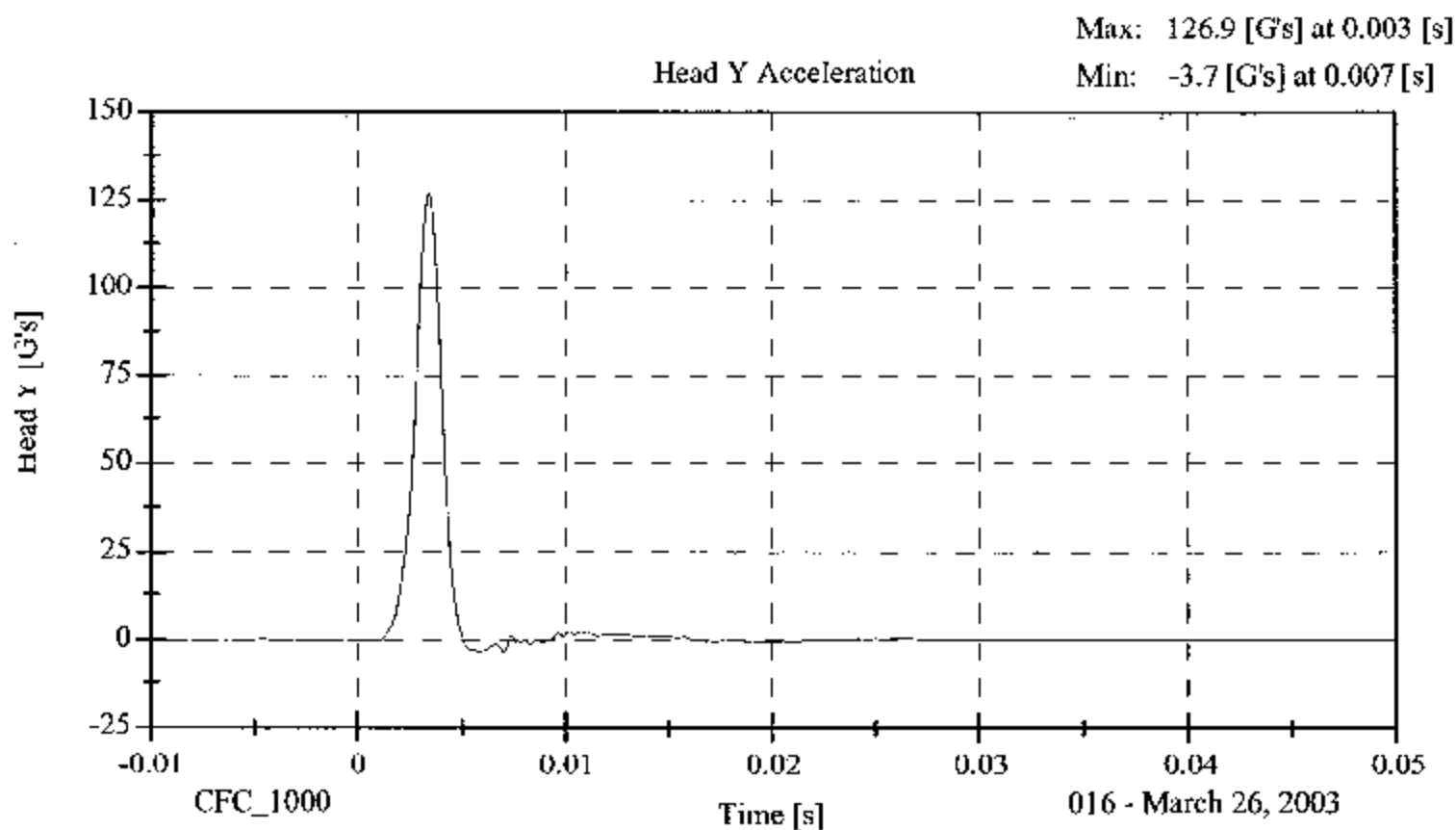
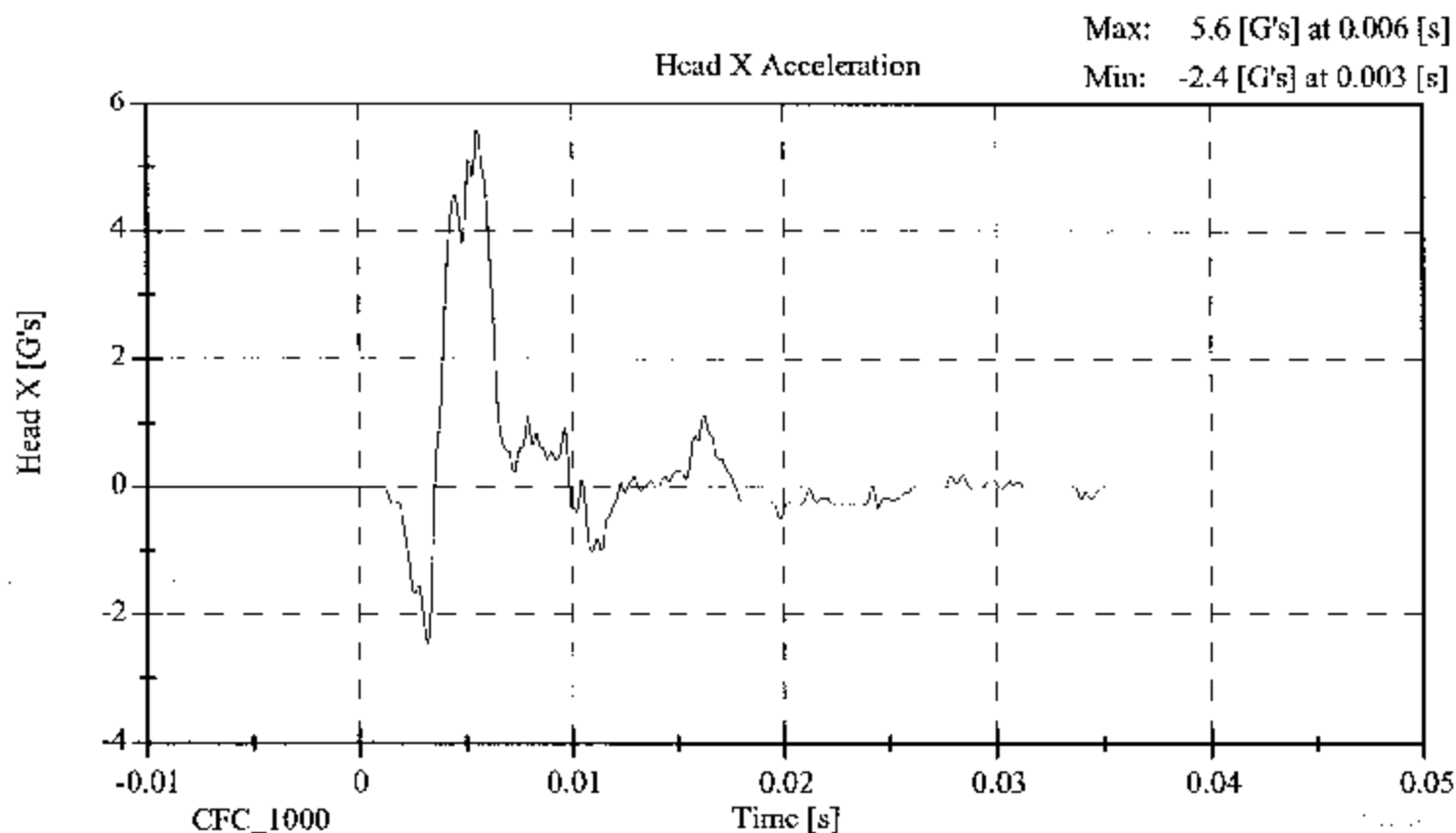
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
Date: March 26, 2003 Laboratory Technician: B. Swiecicki

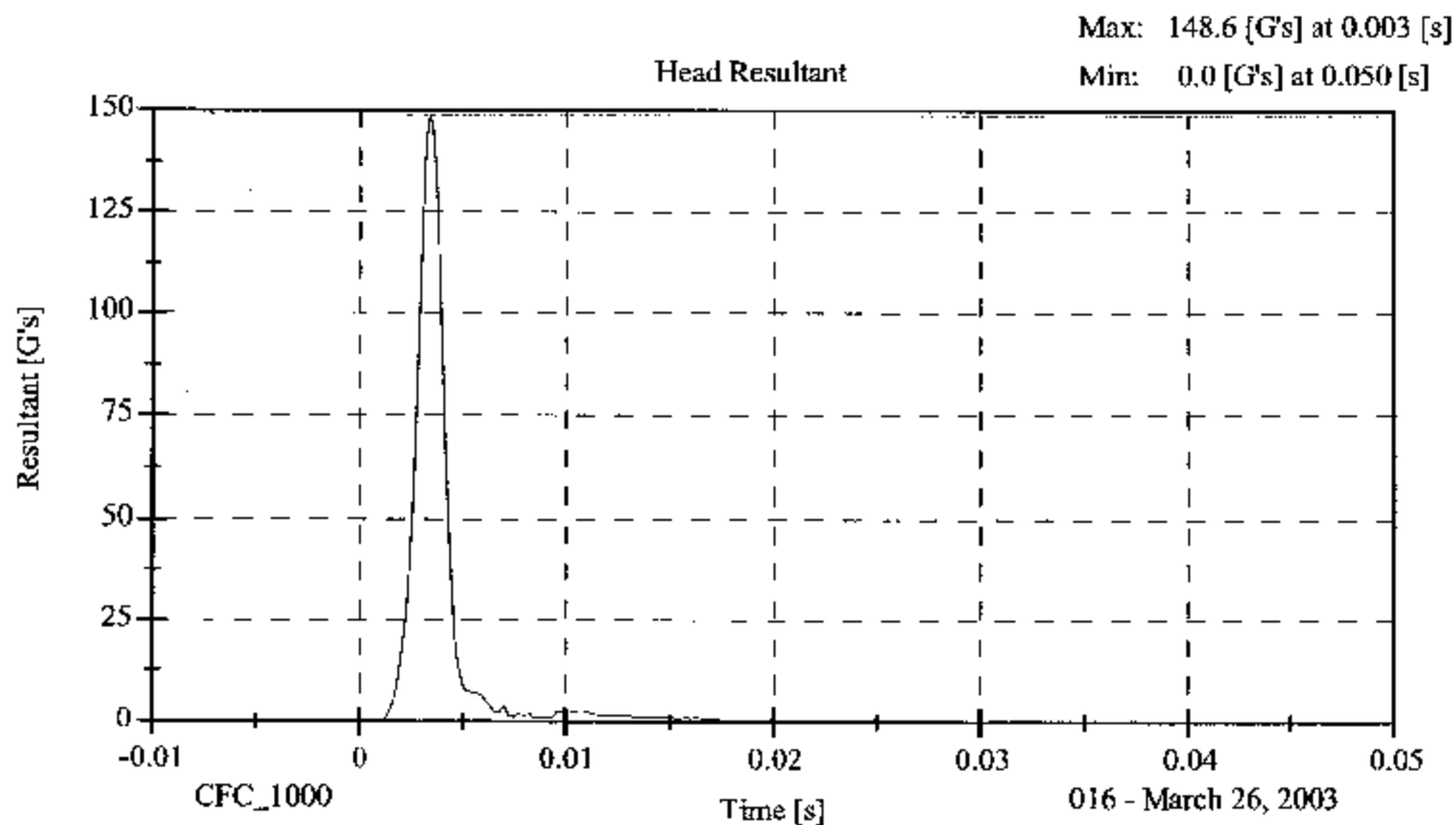
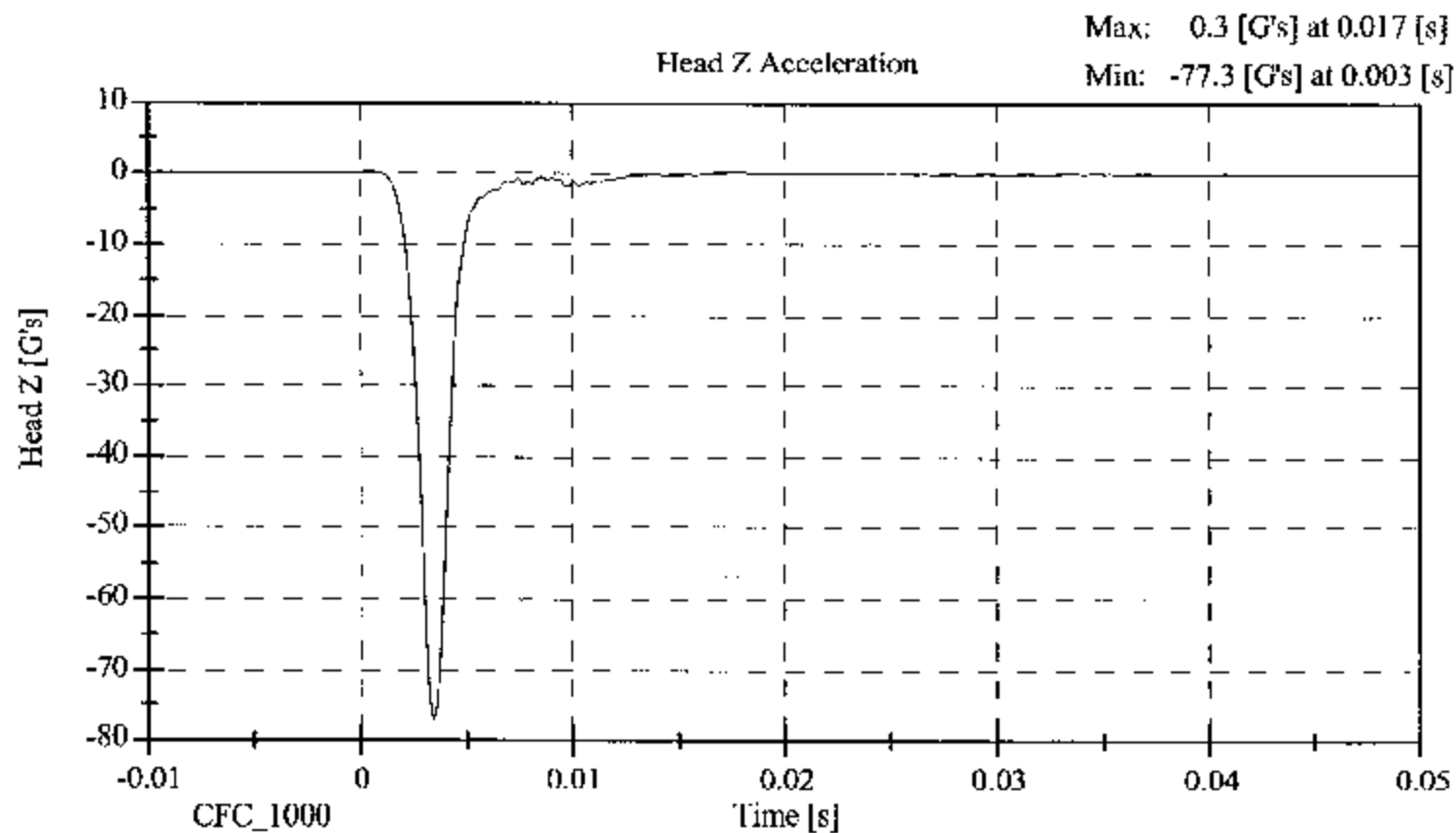
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	20.6 – 22.2	21.7
RELATIVE HUMIDITY (%)	10 – 70	31.00
PEAK RESULTANT ACCELERATION (Gs)	120 – 150	148.61
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 15	5.56
CURVE PERCENT NONMODAL (%)	< 15	2.61

REMARKS: None

Head Drop



Head Drop



**LATERAL NECK BENDING TEST
POST-TEST**

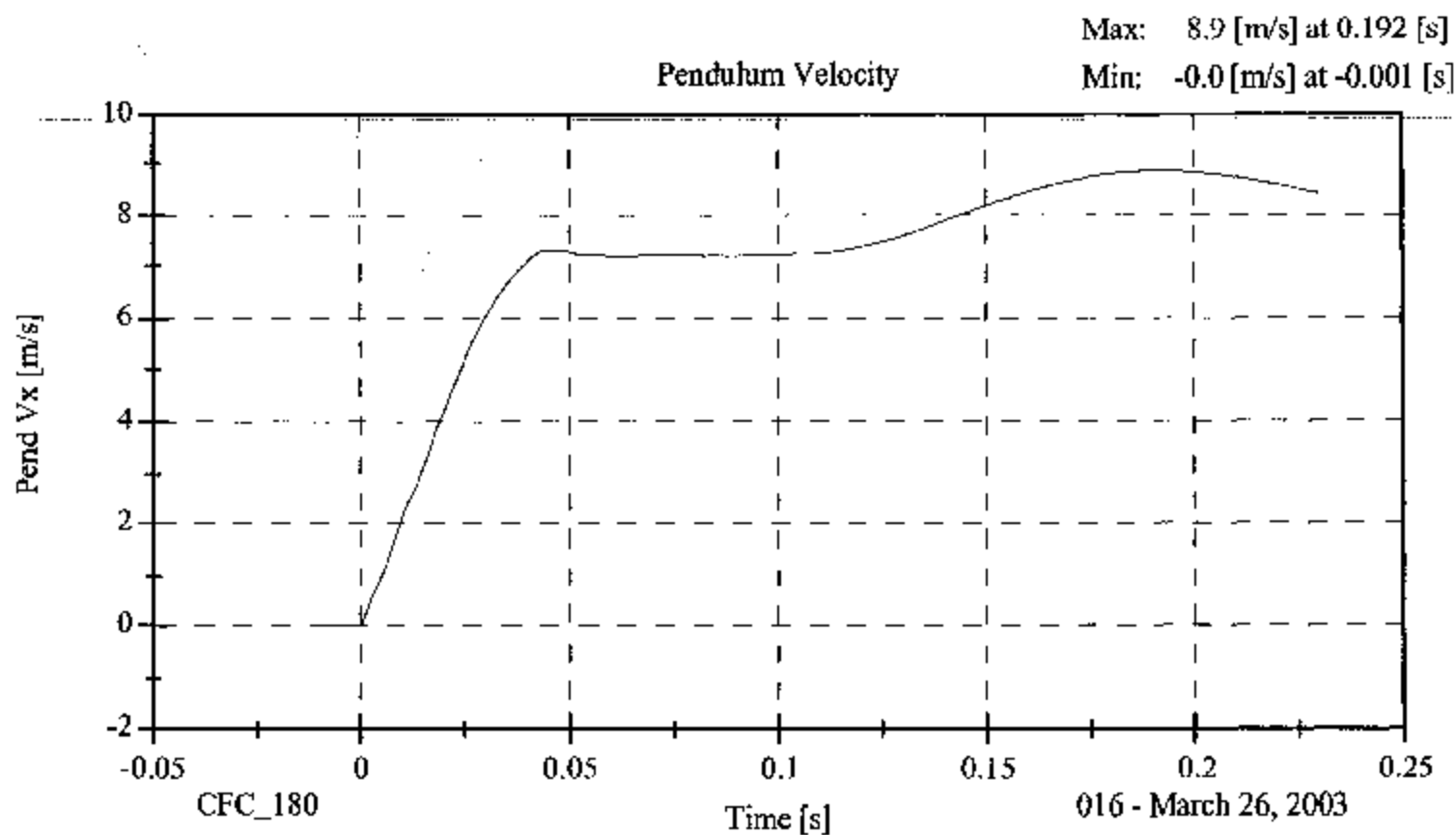
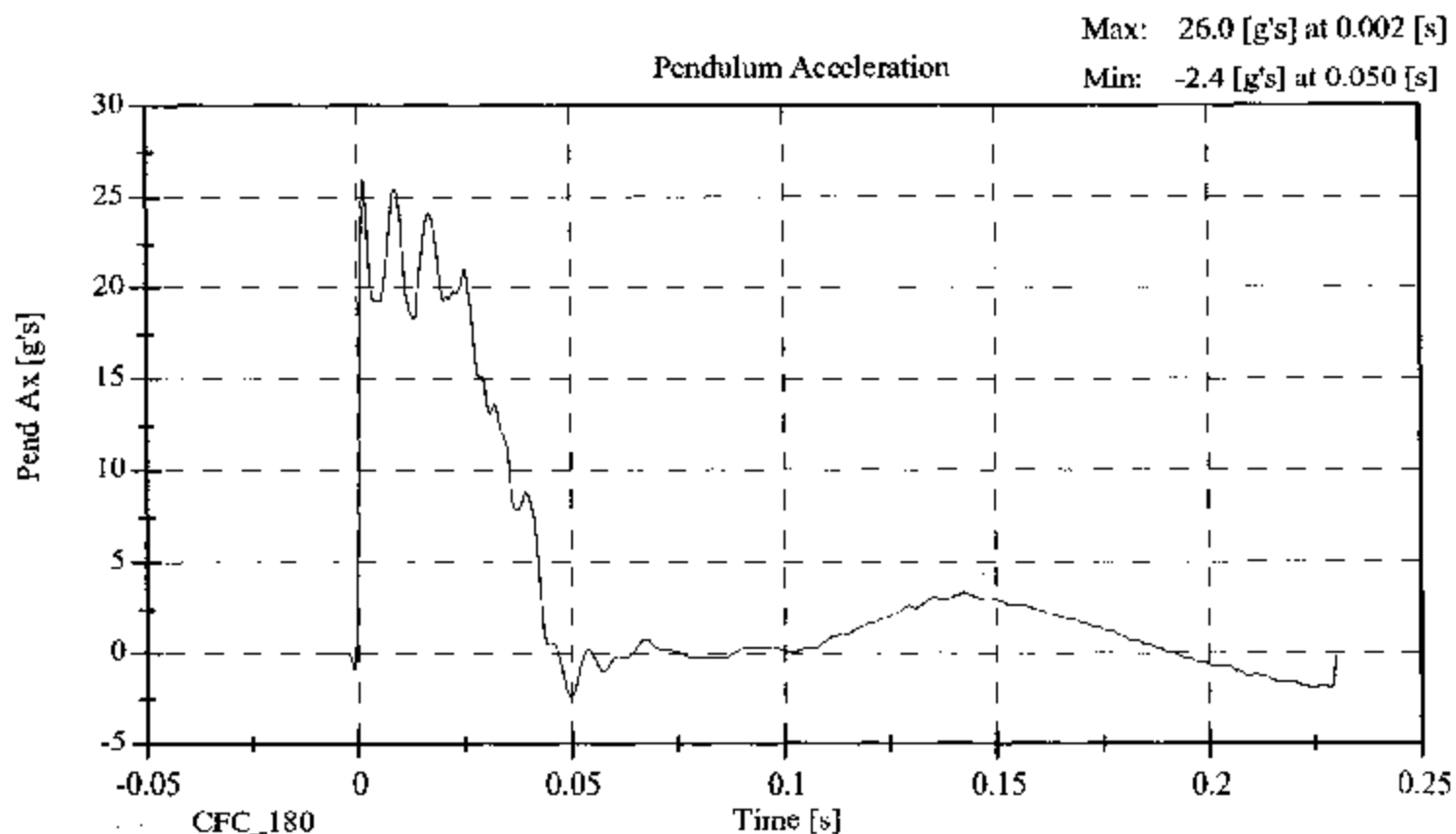
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

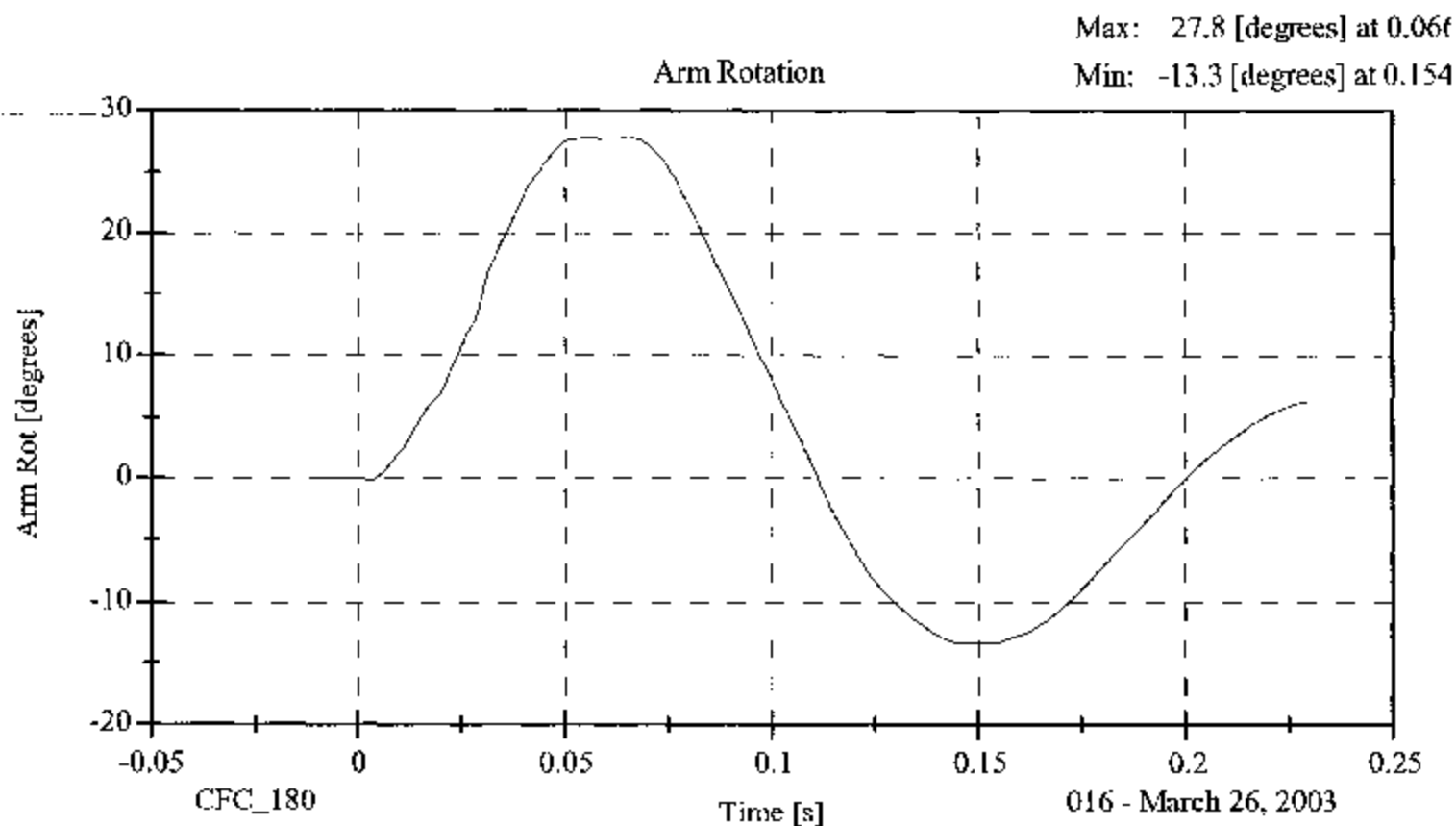
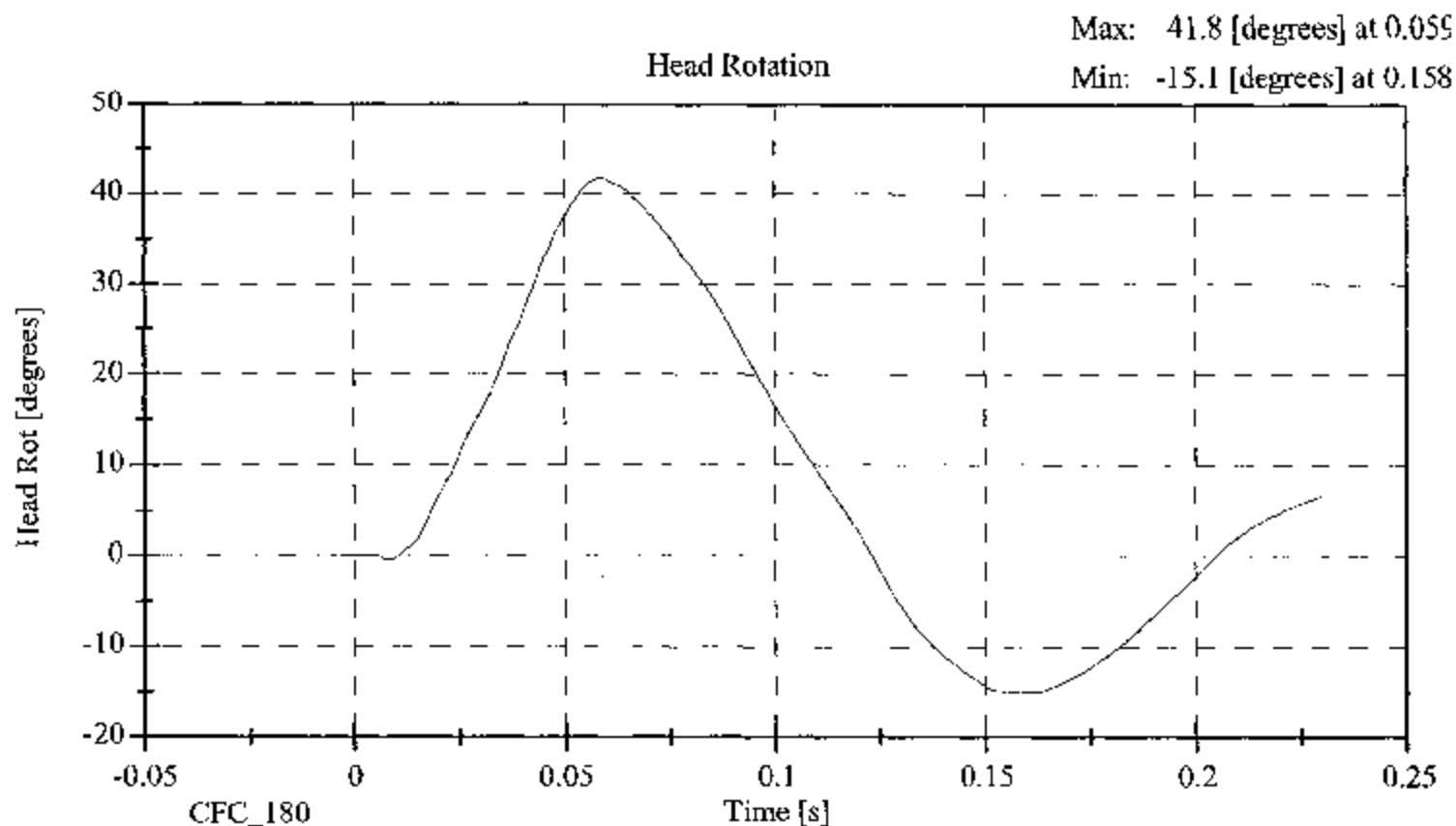
SID Serial No.: 016 Sequential Test Number: 3
Date: March 26, 2003 Laboratory Technician: B. Swiecicki

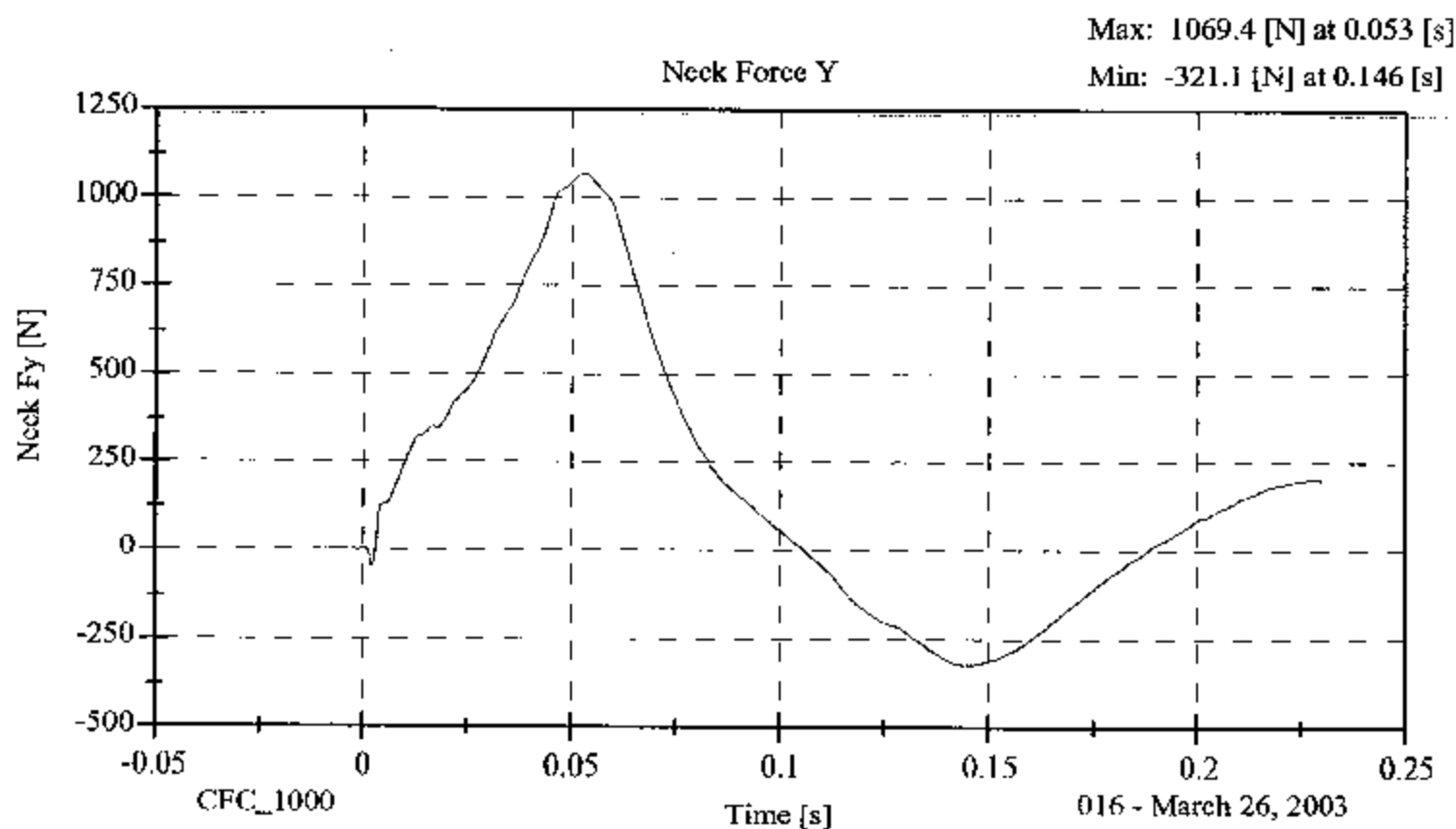
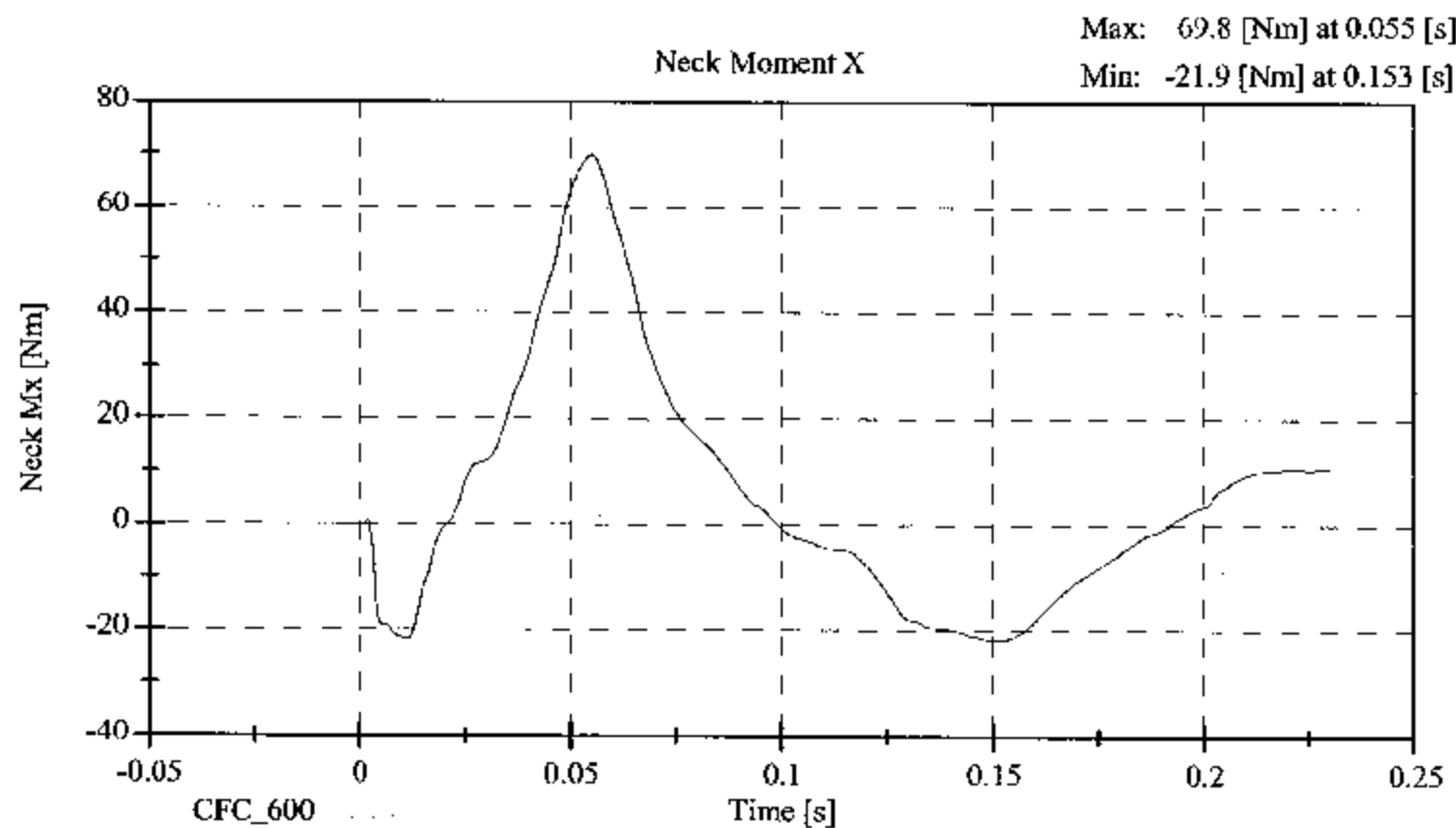
TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	20.6 - 22.2	21.7
RELATIVE HUMIDITY (%)	10 - 70	31.00
IMPACT VELOCITY (m/s)	6.89 - 7.13	6.97
PENDULUM DELTA V		
DELTA V @ 10 ms (m/s)	1.96 - 2.55	2.11
DELTA V @ 20 ms (m/s)	4.12 - 5.10	4.20
DELTA V @ 30 ms (m/s)	5.73 - 7.01	6.02
DELTA V @ 40-70 ms (m/s)	6.27 - 7.64	7.36
D PLANE ROTATION		
MAXIMUM ROTATION (deg)	64 - 78	69.58
ROT. ANGLE TIME to ZERO (ms)	50 - 70	58.50
MOMENT ABOUT THE OCCIPITAL CONDYLE		
MAX OCCIPITAL MOMENT (Nm)	88 - 108	88.58
OCCIPITAL MOMENT DECAY (ms)	40.0 - 60.0	136.60
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT		
ROTATION wrt MOMENT (ms)	0 - 20	4.30

REMARKS: None



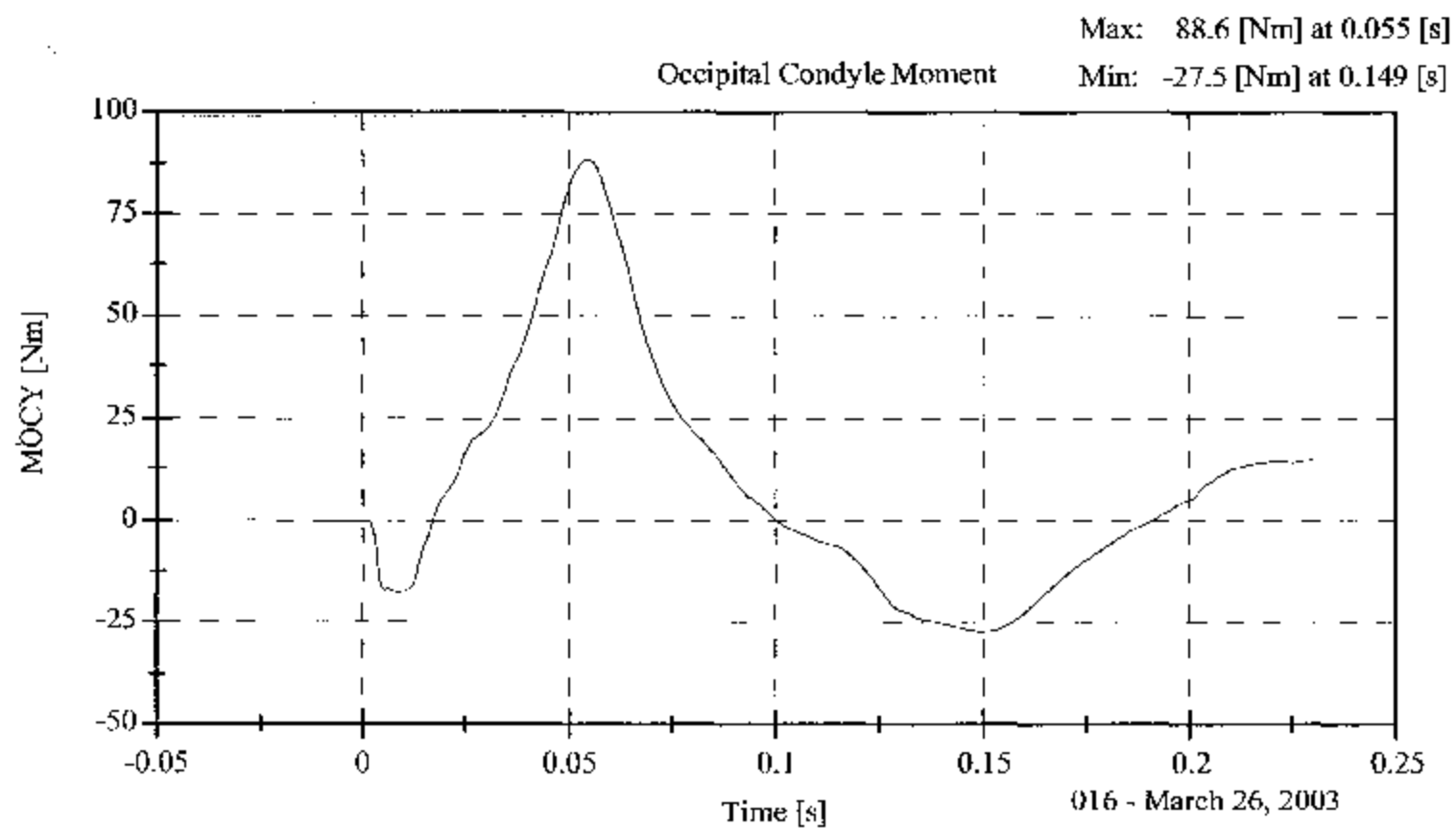
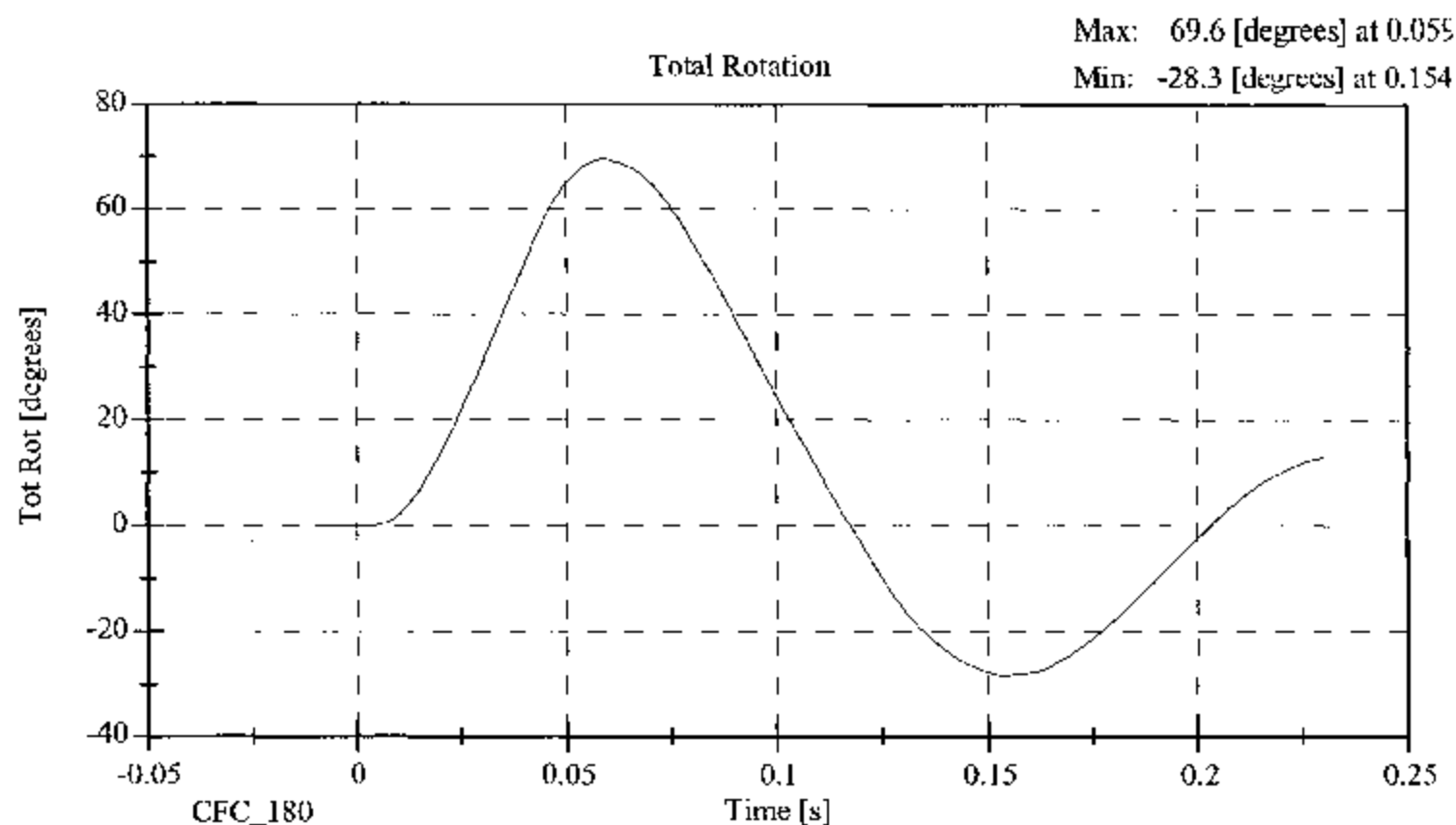
Neck Test





016 - March 26, 2003

Neck Test



**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	35.0
FORCE @ 13 mm (N)	104 - 162	116.54
FORCE @ 19 mm (N)	163 - 221	168.1
FORCE @ 25 mm (N)	222 - 280	253.1
FORCE @ 33 mm (N)	325 - 391	363.86

REMARKS: None

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

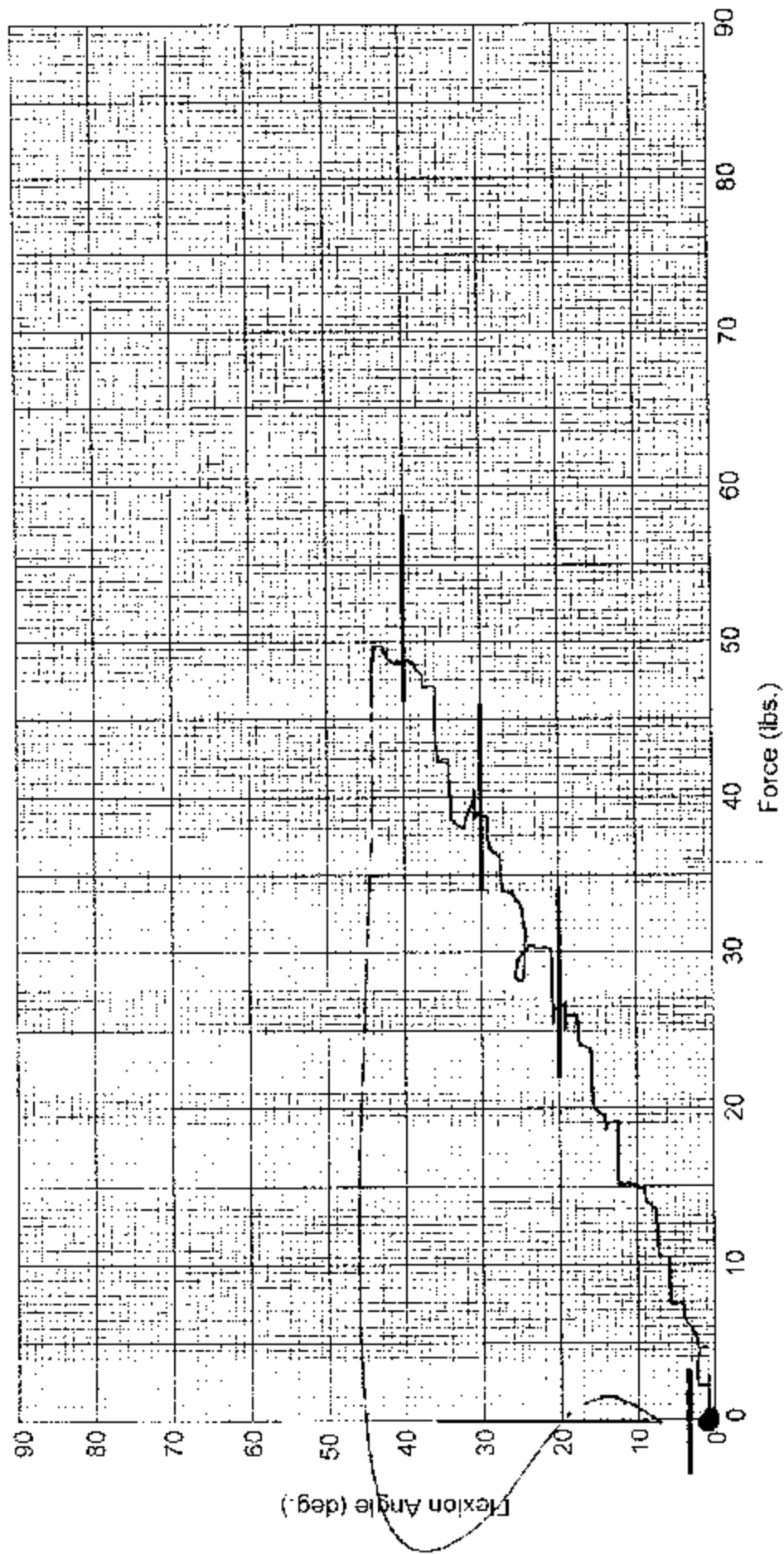
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 3
Date: March 27, 2003 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	38.0
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	117.88
FORCE @ 30° (N)	151.2 - 204.6	171.26
FORCE @ 40° (N)	204.6 - 258	215.74
RETURN ANGLE	12° max.	4.2

REMARKS: None

Dummy S/N 016
 WIA _____
 Date 13-28-08
 Performed By [Signature]
 Temp. 20
 Humidity 38%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

3

Date: March 27, 2003

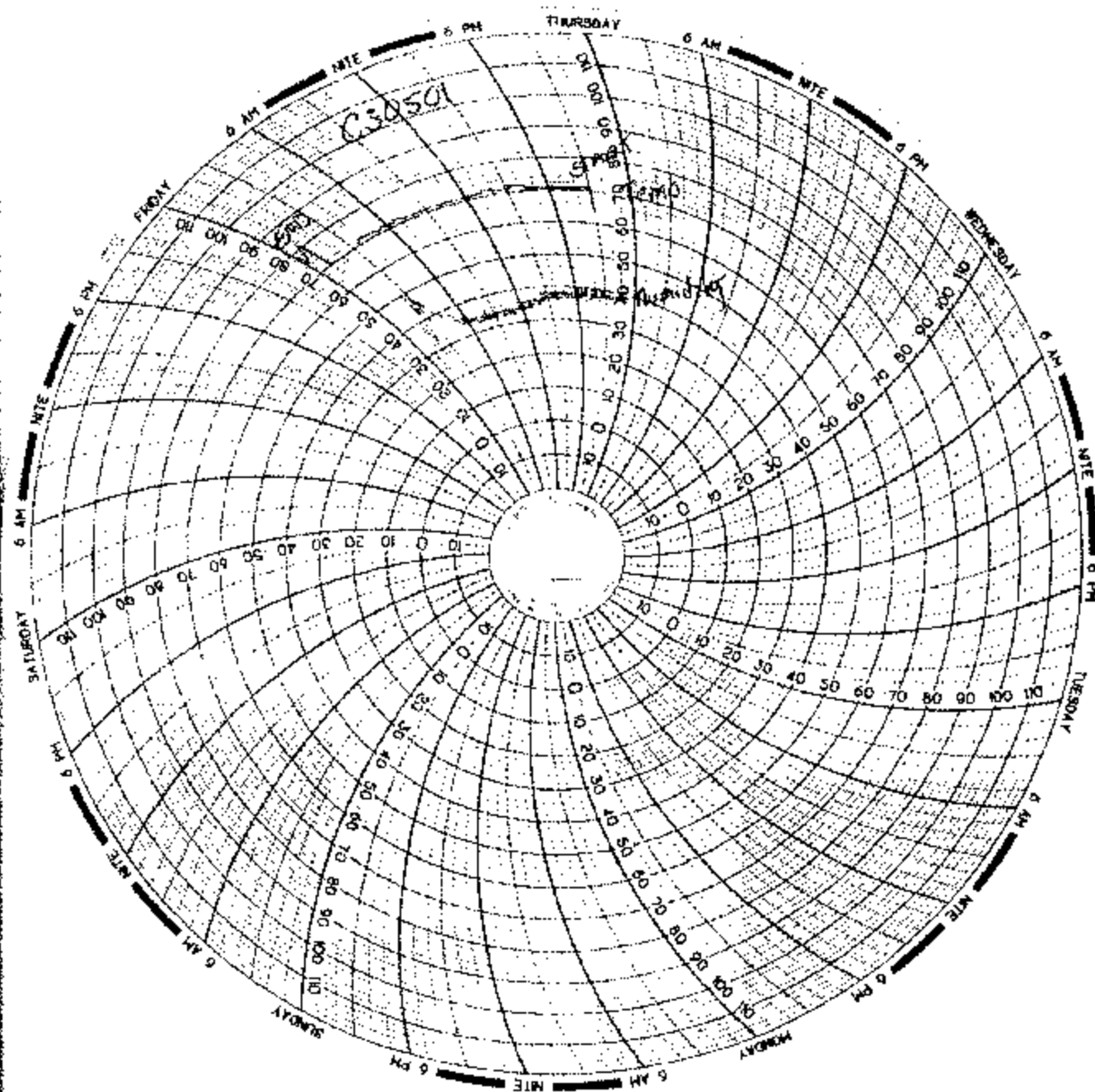
Laboratory Technician:

B. Swicicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

TEMPERATURE TRACE



APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID INSTRUMENTATION

	FRONT SID NO.: 015		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P23993	ENDEVCO	04-Oct-02
HEAD AY	AC-P23939	ENDEVCO	04-Oct-02
HEAD AZ	AC-P23999	ENDEVCO	04-Oct-02
UPPER NECK FX	LC-260Fx	DENTON	12-Nov-02
UPPER NECK FY	LC-260Fy	DENTON	12-Nov-02
UPPER NECK FZ	LC-260Fz	DENTON	12-Nov-02
UPPER NECK MX	LC-260Mx	DENTON	12-Nov-02
UPPER NECK MY	LC-260My	DENTON	12-Nov-02
UPPER NECK MZ	LC-260Mz	DENTON	12-Nov-02
UPPER RIB	AC-P16862	ENDEVCO	18-Feb-03
LOWER RIB	AC-P16656	ENDEVCO	18-Feb-03
LOWER SPINE	AC-P16866	ENDEVCO	18-Feb-03
PELVIS	AC-P16676	ENDEVCO	18-Feb-03
UPPER RIB REDUNDANT	AC-P23156	ENDEVCO	18-Feb-03
LOWER RIB REDUNDANT	AC-P16645	ENDEVCO	18-Feb-03
LOWER SPINE REDUNDANT	AC-P16823	ENDEVCO	18-Feb-03
PELVIS REDUNDANT	AC-P16843	ENDEVCO	18-Feb-03

	REAR SID NO.: 016		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P23960	ENDEVCO	10-Oct-02
HEAD AY	AC-P23940	ENDEVCO	09-Oct-02
HEAD AZ	AC-P23899	ENDEVCO	10-Oct-02
UPPER NECK FX	LC-261Fx	DENTON	12-Nov-02
UPPER NECK FY	LC-261Fy	DENTON	12-Nov-02
UPPER NECK FZ	LC-261Fz	DENTON	12-Nov-02
UPPER NECK MX	LC-261Mx	DENTON	12-Nov-02
UPPER NECK MY	LC-261My	DENTON	12-Nov-02
UPPER NECK MZ	LC-261Mz	DENTON	12-Nov-02
UPPER RIB	AC-P18524	ENDEVCO	17-Feb-03
LOWER RIB	AC-P18533	ENDEVCO	17-Feb-03
LOWER SPINE	AC-P18514	ENDEVCO	17-Feb-03
PELVIS	AC-P18519	ENDEVCO	17-Feb-03
UPPER RIB REDUNDANT	AC-P18528	ENDEVCO	17-Feb-03
LOWER RIB REDUNDANT	AC-P18518	ENDEVCO	17-Feb-03
LOWER SPINE REDUNDANT	AC-P18688	ENDEVCO	17-Feb-03
PELVIS REDUNDANT	AC-P18531	ENDEVCO	17-Feb-03

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-BB51	ENDEVCO	11-Feb-03
RIGHT FRONT SILL (Y)	AC-J32791	ENDEVCO	11-Feb-03
RIGHT FRONT SILL (Z)	AC-J31042	ENDEVCO	10-Feb-03
RIGHT REAR SILL (X)	AC-B11408	ENDEVCO	10-Feb-03
RIGHT REAR SILL (Y)	AC-A13513	ENDEVCO	10-Feb-03
RIGHT REAR SILL (Z)	AC-B10827	ENDEVCO	10-Feb-03
REAR FLOORPAN ABOVE AXLE (X)	AC-P16813	ENDEVCO	11-Feb-03
REAR FLOORPAN ABOVE AXLE (Y)	AC-P17255	ENDEVCO	11-Feb-03
REAR FLOORPAN ABOVE AXLE (Z)	AC-P17145	ENDEVCO	11-Feb-03
LEFT REAR SILL (Y)	AC-P24011	ENDEVCO	04-Oct-02
LEFT FRONT SILL (Y)	AC-P23884	ENDEVCO	10-Oct-02
LEFT FRONT DOOR CENTERLINE (Y)	-	-	-
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-8084-014	ICS	20-Nov-02
MID REAR OF LEFT FRONT DOOR (Y)	-	-	-
LEFT FRONT DOOR UPPER C/L (Y)	-	-	-
MID REAR OF LEFT REAR DOOR (Y)	-	-	-
LEFT REAR DOOR UPPER C/L (Y)	-	-	-
LOWER LEFT B-PILLAR (Y)	AC-P23976	ENDEVCO	04 Oct-02
MIDDLE LEFT B-PILLAR (Y)	AC-P23804	ENDEVCO	10-Oct-02
LOWER LEFT A-PILLAR (Y)	AC-P18682	ENDEVCO	29-Sep-02
UPPER LEFT A-PILLAR (Y)	AC-P18728	ENDEVCO	01-Oct-02
FRONT SEAT TRACK (Y)	AC-P23802	ENDEVCO	11-Oct-02
REAR SEAT TRACK (Y)	AC-8084-039	ICS	20-Nov-02
VEHICLE CG (X)	AC-J32383	ENDEVCO	21-Jan-03
VEHICLE CG (Y)	AC-J29805	ENDEVCO	21-Jan-03
VEHICLE CG (Z)	AC-J25745	ENDEVCO	21-Jan-03
MDB CG (X)	AC-C16682	ENDEVCO	18-Mar-03
MDB CG (Y)	AC-CJ54	ENDEVCO	18-Mar-03
MDB CG (Z)	AC-GK12	ENDEVCO	18-Mar-03
MDB REAR FRAME MEMBER (X)	AC-C16685	ENDEVCO	18-Mar-03
MDB REAR FRAME MEMBER (Y)	AC-CX05	ENDEVCO	18-Mar-03

REMARKS: None